




**MEMPHIS
STATE
UNIVERSITY**

**THE GRADUATE
SCHOOL BULLETIN**

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No. 1

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THE GRADUATE SCHOOL

Calendar 1966-67

1966													
SEPTEMBER							NOVEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
				1	2	3			1	2	3	4	5
4	5	6	7	8	9	10	6	7	8	9	10	11	12
11	12	13	14	15	16	17	13	14	15	16	17	18	19
18	19	20	21	22	23	24	20	21	22	23	24	25	26
25	26	27	28	29	30		27	28	29	30			
OCTOBER							DECEMBER						
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2	3	4	5	6	7	8	4	5	6	7	8	9	10
9	10	11	12	13	14	15	11	12	13	14	15	16	17
16	17	18	19	20	21	22	18	19	20	21	22	23	24
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30	31												
1967													
JANUARY							MAY						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7		1	2	3	4	5	6
8	9	10	11	12	13	14	7	8	9	10	11	12	13
15	16	17	18	19	20	21	14	15	16	17	18	19	20
22	23	24	25	26	27	28	21	22	23	24	25	26	27
29	30	31					28	29	30	31			
FEBRUARY							JUNE						
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			1	2	3	4					1	2	3
5	6	7	8	9	10	11	4	5	6	7	8	9	10
12	13	14	15	16	17	18	11	12	13	14	15	16	17
19	20	21	22	23	24	25	18	19	20	21	22	23	24
26	27	28					25	26	27	28	29	30	
MARCH							JULY						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
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5	6	7	8	9	10	11	2	3	4	5	6	7	8
12	13	14	15	16	17	18	9	10	11	12	13	14	15
19	20	21	22	23	24	25	16	17	18	19	20	21	22
26	27	28	29	30	31		23	24	25	26	27	28	29
							30	31					
APRIL							AUGUST						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1			1	2	3	4	5
2	3	4	5	6	7	8	6	7	8	9	10	11	12
9	10	11	12	13	14	15	13	14	15	16	17	18	19
16	17	18	19	20	21	22	20	21	22	23	24	25	26
23	24	25	26	27	28	29	27	28	29	30	31		
30													

THE GRADUATE SCHOOL MEMPHIS STATE UNIVERSITY

Memphis, Tennessee 38111

Calendar 1966-67

Fall Semester 1966-67

- September 8, Thursday:.....Meeting of new members of the University faculty, University Auditorium, 9:00 A.M.
- September 9, Friday:.....Meeting of the entire University faculty, University Auditorium, 9:00 A.M.
- September 10, Saturday:.....Meeting of the University faculty by schools and departments, 9:00 A.M.
- September 17, Saturday:.....Graduate Registration — See Schedule of Graduate Classes for details.
- September 19, Monday:.....Classes meet as scheduled.
- September 23, Friday:.....Last day for adding courses.
- October 7, Friday:.....Holiday. West Tennessee Education Association.
- October 10, Monday:.....Last day for dropping courses.
- October 18, Tuesday:.....Last day for making application to dean for degrees to be conferred in January, 1967.
- November 11, Friday:.....Holiday. Veterans' Day.
- November 24, Thursday
through
November 27, Sunday:.....Thanksgiving Recess.
- December 18, Sunday
through
January 3, Tuesday:.....Christmas Recess.
- January 13, Friday:.....Final examinations begin.
- January 21, Saturday:.....Commencement, 10:00 A.M.

Spring Semester 1967

- January 28, Saturday:.....Registration, The Graduate School, 9:00 A.M. See Graduate School Schedule of Classes for details.
- February 2, Thursday:.....Classes meet as scheduled.
- February 8, Wednesday:.....Last day for adding courses.
- February 22, Wednesday:.....Last day for dropping courses.
- March 6, Monday:.....Last day for making application to dean for degrees to be conferred in May, 1967.
- March 19, Sunday
through
March 26, Sunday:.....Easter Recess.
- May 19, Friday:.....Final examinations begin.
- May 27, Saturday:.....Commencement, 10:00 A.M.

Summer Session 1967

First Term

- June 7, Wednesday:.....Dormitories will open at noon.
June 8, Thursday:.....Registration. For detailed dates and times
and see the Graduate Schedule of Classes for the
June 9, Friday:.....Summer Session, 1967.
June 12, Monday:.....Classes meet as scheduled.
June 14, Wednesday:.....Last day for adding first-term or two-term
courses.
June 16, Friday:.....Last day for dropping first-term courses.
June 23, Friday:.....Last day for dropping two-term courses.
July 4, Tuesday:.....Holiday. Independence Day.
July 13, Thursday:.....Final examinations.

Second Term

- July 17, Monday:.....Registration. For detailed dates and times
see the Graduate Schedule of Classes for
The Summer Session, 1967.
July 18, Tuesday:.....Classes meet as scheduled.
July 20, Thursday:.....Last day for adding second-term courses.
July 21, Friday:.....Last day for making application to the dean
for degrees to be conferred in August, 1967.
July 24, Monday:.....Last day for dropping second-term courses.
August 17, Thursday:.....Final examinations.
August 19, Saturday:.....Commencement, 10:00 A.M.

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GRADUATE SCHOOL ADMINISTRATION

Administrative Officers

CECIL C. HUMPHREYS, PH.D., *President*

JOHN BAIRD MORRIS, PH.D., *Academic Dean*

JOHN W. RICHARDSON, JR., ED.D., *Dean, Graduate School*

ROBERT MELVILLE ROBISON, M.A., *Dean of Students*

LAMAR NEWPORT, M.A., *Business Manager*

R. P. CLARK, M.A., *Dean of Admissions*

WALTER RHEA SMITH, PH.D., *Dean of The School of Arts and Sciences*

HERBERT JOHN MARKLE, PH.D., *Dean of the School of Business Administration*

SAM HOWARD JOHNSON, ED.D., *Dean of the School of Education*

FREDERIC H. KELLOGG, PH.D., *Dean of the School of Engineering*

ROBERT DOYLE COX, LL.M., *Dean of The School of Law*

HEBER ELIOT RUMBLE, PH.D., *Director of The Summer Session*

EVA SCOTT, *Secretary*

State Board of Education

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COMMISSIONER J. HOWARD WARF, <i>Chairman</i>	Nashville
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HON. THOMAS M. DIVINE.....	Kingsport
HON. JAMES H. JONES.....	Mt. Pleasant
HON. DALE GLOVER.....	Obion
HON. EDWARD L. JENNINGS.....	Liberty
HON. T. R. KEYS.....	Erwin
MRS. BERNARD A. McDERMOTT.....	Nashville
HON. F. THORNTON STRANG.....	Chattanooga
HON. J. FRANK TAYLOR.....	Huntingdon
HON. HAROLD D. WEST.....	Nashville
HON. JAMES WILLIAMS	Henderson
MRS. SAM WILSON.....	Loudon

Graduate School Faculty

- HERBERT GRAVES ALLBRITTEN.....*Associate Professor, Chemistry*
Ph.D. (1951), Pennsylvania State University
- HOLGER W. ANDERSON.....*Associate Professor, Psychology*
Ph.D. (1937), George Peabody College for Teachers
- HARRY AUSPRICH.....*Professor, Speech and Drama*
Ph.D. (1963), Michigan State University
- HAROLD R. BANCROFT.....*Associate Professor, Biology*
Ph.D. (1962), Mississippi State University
- PETER BANNON.....*Professor, English*
Ph.D. (1943), State University of Iowa
- WILLIAM B. BARTON, JR.....*Professor, Philosophy*
Ph.D. (1955), Harvard University
- WILLIAM BITTNER.....*Professor, English*
Ph.D. (1955), University of Pennsylvania
- AARON M. BOOM.....*Professor, History*
Ph.D. (1948), University of Chicago
- *JERRY N. BOONE.....*Associate Professor, Psychology*
Ph.D. (1961), Vanderbilt University
- WILLIAM A. BROTHERTON.....*Associate Professor, Industrial Technology*
Ed.D. (1964), Colorado State College
- CARL D. BROWN.....*Professor, Biology*
Ph.D. (1951), Iowa State University
- M. GORDON BROWN.....*Associate Professor, Spanish*
Ph.D. (1940), University of Madrid
- LEON W. BROWNLEE.....*Professor, Education*
Ph.D. (1952), University of Texas
- ERWIN C. BUELL.....*Professor, Political Science*
Ph.D. (1955), University of North Carolina
- E. DEAN CALLOWAY.....*Assistant Professor, Chemistry*
Ph.D. (1956), University of Alabama
- ANTHONY R. CARIANI.....*Professor, Geology*
Ph.D. (1958), Boston University
- RONALD E. CARRIER.....*Professor, Management*
Ph.D. (1960), University of Illinois

*On leave of absence, 1965-1966

- JAMES ROBERT CHUMNEY, JR.....*Associate Professor, History*
Ph.D. (1964), Rice University
- DON P. CLAYPOOL.....*Professor, Chemistry*
Ph.D. (1952), University of Kentucky
- JAMES W. COLMEY.....*Professor, Education*
Ed.D. (1952), Teachers College, Columbia University
- R. J. COLTHARP.....*Professor, Industrial Technology*
M.S. (1938), Kansas State University
- CONRAD CONSALVI.....*Assistant Professor, Psychology*
Ph.D. (1960), Vanderbilt University
- ROBERT W. COLSTON.....*Special Instructor, Health and Physical Education*
Ph.D. (1952), Indiana University
- JOSEPH FARRIS CRABTREE, II.....*Associate Professor, Education*
Ed.D. (1965), University of Virginia
- E. EARL CRADER.....*Professor, Education*
Ph.D. (1952), George Peabody College for Teachers
- EDWARD IRWIN CRAWFORD.....*Professor, Accountancy*
Ed.D. (1946), New York University
- MAURICE A. CROUSE.....*Assistant Professor, History*
Ph.D. (1964), Northwestern University
- ROBERT RAY CUMMINGS.....*Assistant Professor, Accountancy*
MBA (1965), Memphis State University; C.P.A. (1965), Tennessee
- LAWRENCE W. CURBO.....*Professor, Accountancy*
M.B.A. (1950), University of Mississippi; C.P.A. (1950), Mississippi
- ROBERT STUART CURBO.....*Associate Professor, Accountancy*
M.B.A. (1958), University of Mississippi; C.P.A. (1965), Mississippi
- JOHN LASLEY DAMERON.....*Assistant Professor, English*
Ph.D. (1962), University of Tennessee
- WALTER ELZIE DANLEY.....*Assistant Professor, Education*
Ed.D. (1965), University of Mississippi
- ROBERT ELMER DAVIS.....*Assistant Professor, Education*
Ed.D. (1962), University of Mississippi
- JOHN E. DEWS, JR.....*Assistant Professor, Psychology*
Ph.D. (1965), Vanderbilt University
- HARRY ROBERT DODGE.....*Professor, Marketing*
Ph.D. (1962), Ohio State University
- GEORGE L. DOWD.....*Assistant Professor, Education*
Ed.D. (1956), University of Mississippi

- PAUL B. EAHART.....*Professor, Music*
M.A. (1946), Northwestern University
- JOE REX ENOCH.....*Assistant Professor, Sociology*
Ph.D. (1965), University of Texas
- HENRY B. EVANS.....*Professor, English*
Ph.D. (1938), George Peabody College for Teachers
- JOHN FARRIOR.....*Professor, English*
Ph.D. (1954), University of North Carolina
- JAMES ROY FITZPATRICK.....*Associate Professor, Accountancy*
M.S. (1951), University of Kentucky; C.P.A. (1965), Tennessee
- JIM CARLETON FORTUNE.....*Assistant Professor, Education*
Ed.D. (1965), Stanford University
- JESSE W. FOX.....*Professor, Chemistry*
M.A. (1937), George Peabody College for Teachers
- MICHAEL MCKEE GARLAND.....*Assistant Professor, Physics*
Ph.D. (1965), Clemson University
- LEON GARRETT.....*Assistant Professor, Health and Physical Education*
Ed.D. (1965), George Peabody College
- WILLIAM R. GILLASPIE.....*Associate Professor, History*
Ph.D. (1961), University of Florida
- JOHN R. GORDON.....*Professor, Sociology*
Ph.D. (1951), University of Texas
- IVAN LAMOIN HALL.....*Assistant Professor, Accountancy*
M.B.A. (1958), University of Arkansas; C.P.A. (1965), Tennessee
- MARY VIRGINIA HARE.....*Assistant Professor, English*
Ph.D. (1960), University of Virginia
- GEORGE JONES HARRIS.....*Professor, Music*
M.M. (1947), Northwestern University
- RALPH HATLEY.....*Professor, Health and Physical Ed.*
M.A. (1950), University of Tennessee
- ALBERT FORD HAYNES, JR.....*Professor, Education*
Ed.D. (1958), University of Tennessee
- HERBERT ALLEN HERMANN.....*Assistant Professor, Music*
D.Mus. (1962), Indiana University
- JAMES CLIFFORD HODGETTS.....*Professor, Management*
Ph.D. (1954), University of North Dakota

- ELMORE HOLMES.....*Professor, Chemistry*
Ph.D. (1947), University of Tennessee
- ELMO H. HOWELL.....*Associate Professor, English*
Ph.D. (1955), University of Florida
- G. LEON HOWELL.....*Assistant Professor, Biology*
Ph.D. (1959), University of Alabama
- RICHARD JOHN HRUBY.....*Associate Professor, Economics and Finance*
Ph.D. (1964), Clark University
- CHARLES CARROL IJAMS.....*Professor, Physics*
Ph.D. (1941), Vanderbilt University
- R. W. JENNINGS.....*Professor, Business Education*
Ph.D. (1949), University of Kentucky
- SAM H. JOHNSON.....*Professor, Education*
Ed.D. (1954), New York University
- PRASAD KADABA.....*Professor, Engineering*
Ph.D. (1949), University of California at Los Angeles
- H. S. KALTENBORN.....*Professor, Mathematics*
Ph.D. (1934), University of Michigan
- ROBERT H. KARRAKER.....*Assistant Professor, Chemistry*
Ph.D. (1961), Iowa University
- FREDERIC H. KELLOGG.....*Professor, Engineering*
Ph.D. (1934), Johns Hopkins University
- LEO JAY KELLY.....*Associate Professor, Education*
Ed.D. (1960), Colorado State College
- JAMES KEITH KENNEDY.....*Associate Professor, Speech and Drama*
Ph.D. (1963), University of Florida
- IRL B. KRAUSE, JR.....*Associate Professor, Education*
Ed.D. (1954), University of Mississippi
- ABRAHAM DAVID KRIEDEL.....*Assistant Professor, History*
Ph.D. (1964), Duke University
- EDWIN MURRAY LABOUNTY.....*Assistant Professor, Music*
Mus.D. (1962), Indiana University
- EUGENE W. LAMBERT.....*Professor, Health and Physical Education*
Ed.D. (1942), Columbia University
- JOSEPH STANLDY LAYNE.....*Assistant Professor, Biology*
Ph.D. (1964), University of Mississippi Medical Center
- FRANK C. LEEMING.....*Assistant Professor, Psychology*
Ph.D. (1963), University of Mississippi

- *GEORGE B. LEON.....*Assistant Professor, History*
Ph.D. (1961), University of Georgia
- LOWELL ALVIN LOGAN.....*Professor, Biology*
Ph.D. (1959), University of Missouri
- CHARLES E. LONG.....*Professor, German*
Ph.D. (1963), University of Arkansas
- FREDERIC LUBRANI.....*Assistant Professor, Music*
M.M. (1946), Cincinnati Conservatory of Music
- MICHAEL BURKE LUPFER.....*Assistant Professor, Psychology*
Ph.D. (1964), University of Miami
- JAMES R. McCANN.....*Professor, Psychology*
Ph.D. (1955), Vanderbilt University
- HARRY RICHARD MAHOOD.....*Assistant Professor, Political Science*
Ph.D. (1960), University of Illinois
- HERBERT J. MARKLE.....*Professor, Economics and Finance*
Ph.D. (1951), State University of Iowa
- ROBERT H. MARSHALL.....*Associate Professor, Chemistry*
Ph.D. (1954), University of Illinois
- JAMES S. MATTHEWS.....*Professor, Geography*
Ph.D. (1949), University of Chicago
- WALTER LOUIS NELMS.....*Assistant Professor, Education*
Ed.D. (1964), University of Mississippi
- WAYNE E. NEWKIRK.....*Assistant Professor, Management*
Ph.D. (1965), Louisiana State University
- CHARLES H. NEWTON.....*Professor, Sociology*
Ph.D. (1962), Florida State University
- ELBERT F. NOTHERN.....*Professor, Education*
Ed.D. (1953), University of Arkansas
- ROBERT LEE OGLE.....*Assistant Professor, Industrial Technology*
Ed.D. (1963), University of Tennessee
- MARCUS W. ORR.....*Associate Professor, History*
Ph.D. (1958), University of Illinois
- WILLIAM ROBERT OSBORNE.....*Associate Professor, English*
Ph.D. (1955), George Peabody College for Teachers
- MAURICE ALFRED PARKINSON.....*Associate Professor, French*
Ph.D. (1954), University of North Carolina

*On leave of absence, 1965-1966

- CARROLL L. PELL.....*Professor, French*
Ph.D. (1949), University of Wisconsin
- ALFRED EUGENE PERRY.....*Assistant Professor, Biology*
Ph.D. (1965), Oklahoma State University
- ELIZABETH C. PHILLIPS.....*Associate Professor, English*
Ph.D. (1953), University of Tennessee
- GERALD SWETNAM PIERCE.....*Assistant Professor, History*
Ph.D. (1963), University of Mississippi
- NOEL G. RAPP.....*Associate Professor, Speech and Drama*
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- ABDEL RAZZAK MOHAMED RASHAD.....*Professor, Engineering*
Ph.D. (1960), Cairo University
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Ph.D. (1960), Columbia University
- JOHN W. RICHARDSON, JR.....*Professor, Education*
Ed.D. (1957), New York University
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Ph.D. (1962), University of Illinois
- JOSEPH R. RILEY.....*Associate Professor, English*
Ph.D. (1962), Vanderbilt University
- CHARLES N. ROBINSON.....*Associate Professor, Chemistry*
Ph.D. (1953), University of Tennessee
- A. S. RUDOLPH.....*Professor, Biology*
Ph.D. (1938), Iowa State College
- HEBER ELIOT RUMBLE.....*Professor, Education*
Ph.D. (1943), University of Illinois
- DONALD H. SANDERS.....*Professor, Management*
Ph.D. (1965), University of Arkansas
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Ph.D. (1963), Cornell University
- RITA SAWYER.....*Associate Professor, Education*
Ed.D. (1964), Syracuse University
- FRANK B. SCHIRMER, JR.....*Professor, Chemistry*
Ph.D. (1939), Cornell University
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P.E.D. (1954), Indiana University
- DARRELL D. SIMMONS.....*Associate Professor, Industrial Technology*
Ed.D. (1958), University of Tennessee
- PAUL H. SISCO.....*Professor, Geography*
Ph.D. (1954), University of Chicago

- JOHANNES SMIT.....*Associate Professor, Music*
Ph.D. (1953), Eastman School of Music, University of Rochester
- ALFRED WINN SMITH.....*Associate Professor, English*
Ph.D. (1954), George Peabody College for Teachers
- OMAR E. SMITH.....*Assistant Professor, Biology*
Ph.D. (1961), Iowa State
- WALTER R. SMITH.....*Professor, English*
Ph.D. (1951), University of California
- WILL D. SMITH.....*Associate Professor, Education*
Ph.D. (1952), George Peabody College for Teachers
- JOHN A. SOBOL.....*Associate Professor, Geography*
Ph.D. (1961), University of Michigan
- WILLIAM H. SPELL.....*Assistant Professor, Physics*
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- JESSE W. SPICELAND.....*Professor, Accountancy*
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- SILVIO J. SPIGOLON.....*Associate Professor, Engineering*
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M.A. (1942), State University of Iowa
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Ph.D. (1963), University of Arkansas
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- DONALD DEAN STEWART.....*Professor, Sociology*
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- CALVIN M. STREET.....*Professor, Education*
Ed.D. (1953), University of Tennessee
- HARRY HARMON SUMMER.....*Associate Professor, Marketing*
Ph.D. (1965), University of Illinois
- LUCILLE BUTLER TAYLOR.....*Associate Professor, Education*
Ed.D. (1964), Syracuse University
- CHARLES LAMAR THOMPSON.....*Assistant Professor, Education*
Ed.D. (1963), University of Southern Mississippi
- JAMES T. THOMPSON.....*Professor, Accountancy*
M.B.A. (1949), Indiana University; C.P.A. (1960), Tennessee
- WAYLAND A. TONNING.....*Professor, Marketing*
Ph.D. (1959), University of Illinois
- AGNES ANNE TROTTER.....*Assistant Professor, History*
Ph.D. (1965), Duke University

- DAVID MILTON TUCKER.....*Assistant Professor, History*
Ph.D. (1965), University of Iowa
- CLARENCE L. UNDERWOOD.....*Professor, Education*
Ph.D. (1935), University of Pittsburgh
- DWIGHT VAN DEVATE, JR.....*Associate Professor, Philosophy*
Ph.D. (1956), Yale University
- FESTUS JUSTIN VISER.....*Professor, Economics*
Ph.D. (1958), New York University
- WALTER WILSON WADE.....*Associate Professor, Music*
Ph.D. (1958), Northwestern University
- DAVID T. WALKER.....*Associate Professor, Mathematics*
Ph.D. (1955), University of Georgia
- ROBERT F. WATSON.....*Assistant Professor, Chemistry*
Ph.D. (1963), University of Tennessee
- DAVID A. WEST.....*Professor, Economics and Finance*
Ph.D. (1961), University of Arkansas
- BRADFORD WHITE.....*Professor, Speech and Drama*
M.F.A. (1939), Yale University
- HELEN WHITE.....*Associate Professor, English*
Ph.D. (1958), George Peabody College
- LONNIE J. WHITE.....*Associate Professor, History*
Ph.D. (1961), University of Texas
- WALTER E. WILHELM.....*Assistant Professor, Biology*
Ph.D. (1964), Southern Illinois University
- MAJOR LOYCE WILSON.....*Assistant Professor, History*
Ph.D. (1964), University of Kansas
- BYRON HOOPER WISE.....*Assistant Professor, Biology*
Ph.D. (1962), University of Florida
- MARY WITT.....*Associate Professor, Education*
Ed.D. (1954), George Peabody College
- JAMES D. WOOLF.....*Associate Professor, English*
Ph.D. (1953), Vanderbilt University
- ALBERT HAINES WOOLLETT.....*Assistant Professor, Physics*
Ph.D. (1956), University of Oklahoma
- MILTON WRAY.....*Assistant Professor, Accountancy*
M.B.A. (1954), University of Pennsylvania; C.P.A. (1956), Tennessee
- TZE SUN WU.....*Professor, Engineering*
Ph.D. (1952), University of Illinois
- LAWRENCE WYNN.....*Professor, English*
Ph.D. (1951), Princeton University

General Information

The Graduate School of Memphis State University is the center of advanced study within the University, the purpose of which is to train scholars and to carry on research in the fields of learning represented by its faculties.

The Graduate School aims first of all to meet the needs of students who wish to continue, on a more advanced level, some field of study begun in undergraduate courses, and who desire preparation for scholarly careers. The Graduate School is also concerned with preparing those who plan to teach or assume leadership responsibility in the public school system or in colleges. A general mastery of the field of interest is considered essential to all graduate programs.

The University operates on the semester system. The official calendar on page 3 shows dates for registration and the beginning of course work.

Three schedules, each carrying proportionate residence credit, are operated in the Fall and Spring semesters: one for full-time students, one for students who can attend classes only in the evening, and one for students who can attend classes only on Saturday.

Organization of the Graduate School

The Graduate School is under the direction of the Graduate Council. This council is composed of the President of the University, the Dean of the Graduate School, the Chairmen of each department in which the equivalent of a graduate major is offered, and in addition one faculty representative from each department in which the equivalent of a graduate minor is offered. Departments offering graduate courses, but not the equivalent of a major or minor, are collectively represented by one additional council member.

Students admitted to the Graduate School are responsible to the Graduate Council through the Dean of the Graduate School. Any approved graduate faculty member may act as major or minor adviser to students in their respective departments.

PHYSICAL FACILITIES

Academic Buildings

THE ADMINISTRATION BUILDING, the first academic building on the campus, was completed in 1912; it has been enlarged and remodeled several times and is completely air conditioned. It houses most of the administrative offices of the University and contains classroom and office space for several departments in The School of Arts and Sciences. The Academic Computer Center is also located in this building.

MANNING HALL, built in 1930 and named in honor of the University's first instructor in science, Priestly Hartwell Manning, provides the departments of Chemistry, Physics, and Home Economics with classrooms, offices, laboratories, a science auditorium, and faculty and graduate research facilities.

JOHNSON HALL, completed in 1958, is named in honor of Dr. Rayburn W. Johnson, Professor Emeritus of Geography, and his late wife, Ethel B. Johnson. Air conditioned throughout, it contains classrooms, laboratories, offices, a map library, a conference room, and an auditorium for the departments of Geography and Geology, and Psychology. The map library, a depository for the Army Map Service, Washington, D. C., contains over 10,000 maps. On the ground floor is the Ethel B. Johnson Reception Room, dedicated to the use of the Memphis State University Faculty Wives Club.

JONES HALL, named in honor of Otis Henry Jones, University bursar from 1925 to 1937, was completed in 1960 and enlarged in 1964. It is completely air conditioned and provides classroom and office space for the departments of Aerospace Studies, Art, Classical Languages, and Modern Languages (with an electronic language laboratory). It also houses the University Post Office and the office of the coordinator of Veterans' Affairs.

THE SCHOOL OF BUSINESS ADMINISTRATION BUILDING is a four-story, air-conditioned structure with an adjoining auditorium; it contains administrative offices, classrooms, laboratories, and offices for the departments of Accountancy, Economics and Finance, Political Science, Management, Marketing, Secretarial Science and Office Management.

THE INDUSTRIAL TECHNOLOGY BUILDING, built in 1941, and enlarged in 1946, and 1960, provides classrooms, offices, and extensive laboratory facilities for drafting, surveying, woodworking, metal-working, ceramics, and general shop practices. The University Printing Plant is located in this building.

THE MEMPHIS STATE UNIVERSITY CAMPUS SCHOOL, operated in cooperation with the Board of Education of the City of Memphis, provides air-conditioned facilities for training student teachers and opportunities for observing good teaching procedures. In addition to regular classrooms it features flexible spaces, learning cubicles, one-way observation glass, sound controls, connections for television broadcasts and reception, and modern facilities to meet the needs of modern public school teaching. These facilities are also utilized in faculty and graduate demonstration, research and experimental projects.

THE FIELD HOUSE, built in 1951 and enlarged in 1958 and 1964, contains basketball courts, gymnasiums, classrooms, a stage, seats for 4000, and offices for the Department of Health and Physical Education and for athletics.

THE BIOLOGICAL SCIENCES BUILDING, completed in 1964, is an air-conditioned building containing classrooms, laboratories, specimen areas, research facilities, and an auditorium.

THE SCHOOL OF EDUCATION BUILDING, an air-conditioned structure also completed in 1964, houses the administration and faculty offices of The School of Education as well as general and special classrooms, laboratory and research areas (including a curriculum laboratory), and an auditorium. The Herff School of Engineering, the offices of the State Board of Education, and the University of Tennessee Graduate Program, are also located in this building.

THE SCHOOL OF LAW ANNEX, consisting of one wing of the former campus school, provides air-conditioned classrooms (including one arranged as a typical courtroom) and offices for The School of Law. An air-conditioned building which is immediately adjacent houses the law library and study facilities.

NEW ACADEMIC BUILDINGS. Presently under construction and scheduled for occupancy during the 1966-67 school year are five buildings designed to increase facilities for the academic program: A chemistry and mathematics building facing the central mall; a music building and a speech and drama building, two units of the Fine Arts Complex facing Central Avenue; a classroom building located between the Business Administration and the Biological Sciences Buildings.

THE LIBRARY. *The University Library*, named in honor of former President John Willard Bristor, was built in 1927; it has since been considerably enlarged, the latest edition having been completed in 1963. The collection at present numbers over 200,000 volumes, including all U.S. Government publications since 1956. Subscriptions and files are maintained for general and specialized periodicals.

DORMITORIES AND OTHER HOUSING. There are six residence halls for women: *Mynders Hall*, *West Hall*, and *Nellie Angel Smith Hall*, usually assigned to freshmen; *Highland Towers*, *Rawls Hall*, and *Scates Hall*, for upper classmen.

There are six residence halls for men: *Hayden Hall*, *North Hall*, *East Hall*, *YMCA*, *Robison Hall*, and *Highland Towers*.

VETS' VILLAGE is a group of frame buildings containing 59 apartments; built after World War II to house veterans and their families,

these units are now open to all married students, although veterans retain preference. Applications for occupancy should be made to the Men's Housing Office.

AUXILIARY BUILDINGS. *The Old Gymnasium* was in 1961 converted into studio and office space for WKNO-TV, the educational television station operated by the Memphis Community Television Foundation.

The Cafeteria, with a seating capacity of 500, adjoins *The Student Center*, which contains a soda fountain, two snack bars, and facilities for group meetings, games, and dancing. A faculty dining room is located in a wing of the former campus school building. All of these facilities are air-conditioned.

The Panhellenic Building, erected in 1959 and enlarged in 1963 by the national sororities with chapters on the campus, is an air-conditioned facility which affords suites for ten sororities and a hostess, guest room, kitchen, and ballroom.

The University Auditorium, located in the air-conditioned Administration Building, seats 1200 and has a stage fully equipped for dramatic and musical productions.

The Bookstore provides air-conditioned, self-service shopping facilities for text-books, and school supplies and equipment.

CHUCALISSA INDIAN VILLAGE AND MUSEUM. Chucalissa, prehistoric Indian town and museum, situated in the southwest corner of Shelby County on Mitchell Road, is operated by the University as a research and training facility. Excavation of the site is being undertaken, with students performing the archaeological field work under staff supervision. Adjoining acreage serves as a biological field station. Chucalissa also provides indoor and outdoor archaeological exhibits, open to the public throughout the year.

Extension Division

E. EARL CRADER, *Director*

Memphis State University has for a number of years conducted general education workshops. The increasing demand for these services has resulted in the organization of an Extension Division. The Extension Division was authorized by the State Board of Education in 1951 to afford an official avenue through which university services could be extended off-campus.

EXTENSION CLASS INSTRUCTION

Graduate courses are offered through the Extension Division of Memphis State University at centers where suitable arrangements are made in advance. Regularly employed graduate faculty members listed in this Bulletin teach graduate extension courses. The subject matter taught is exten-

sion classes is the same as that offered on campus. Regulations regarding the approval of extension courses toward requirements for the Master's degree are found on page 30 of this Bulletin.

OTHER EXTENSION SERVICES

Where circumstances justify, the Extension Division attempts to provide various types of help to organized groups within the service area. This assistance may take the form of such activities as conferences, public addresses, consultative service, and other types of school and community aid. Regularly employed staff members of Memphis State University are available for this service.

To the end that an effective extension service may be carried on by Memphis State University, correspondence is invited with groups or individuals who are interested. Please address correspondence to:

EXTENSION DIVISION
School of Education Building, Room 401
Memphis State University
Memphis, Tennessee 38111

Admission To The Graduate School

The Graduate School is open to persons holding the Bachelor's degree from colleges and universities recognized by standard, general or regional accrediting agencies, whose undergraduate work has been of sufficient quality and scope to enable them to profitably pursue graduate study.* Scores are required on the Miller Analogies Test or the aptitude phase of the Graduate Record Examination. In the event the student intends to seek the Master of Business Administration degree he should present scores on the Graduate Record Examinations Advanced Business Test if possible. These tests may be taken in any institution approved to administer them.

Admission to the Graduate School merely gives the privilege of taking course work. It does not in any way imply that the student is admitted to candidacy for an advanced degree.

Application blanks for admission to the Graduate School may be secured from the office of the Dean of Admissions; all inquiries should be addressed to him. Students who wish to arrange for the Miller Analogies Test should call or write the Guidance and Testing Office, Administration

***NOTE:** Undergraduate students at Memphis State University who are enrolled for courses which complete their undergraduate degree may apply for admission to graduate studies and in special cases be allowed to register for graduate courses not to exceed a total of 15 semester hours of combined course work.

Building for a date. A \$4.00 fee is charged for the test. It is payable in the Business Office.

Applicants for admission must submit an application and two official transcripts of their undergraduate credits before being considered for entrance into the Graduate School. An application fee of \$5.00 is required at the time the applications are submitted.

Applicants must present evidence of good health, moral character, and intellectual capacity necessary for pursuing graduate study.

Registration and Attendance

After being notified of acceptance to Graduate School, the student must arrange a personal conference with the Dean. During this conference the Dean will assign tentative advisers and will advise as to programs available in Graduate School.

The student at this early interview will be expected to declare his major and minor areas of study. Students who have previously declared major and minor areas of study but desire to make a change should arrange a conference with the Dean in order that the records may be revised.

The current *Schedule of Classes* will contain complete information concerning registration procedures.

ADDING OR DROPPING COURSES OR CHANGING SECTIONS

After a graduate student has completed his registration, it cannot be changed without approval of the Dean of the Graduate School. The adjustment will originate in the office of the Dean, and the change-of-course must have the approval of the student's major adviser and the Dean.

WITHDRAWING FROM GRADUATE SCHOOL

Failure to give official notice of complete withdrawal from Graduate School in writing will result in a grade of "F" in each course for which the student was registered.

A withdrawal is not permitted within one week of the beginning of the final examination period of a semester or a summer term. Any student who withdraws after the drop period ends will have all courses not previously dropped recorded as: WP—Withdrew Passing or WF—Withdrew Failing.

Address your notice of withdrawal to:

DEAN, THE GRADUATE SCHOOL

Memphis State University
Memphis, Tennessee 38111

Expenses and Financial Aid

The matter of expense while attending the University is of importance to every student. It is difficult, however, to give specific information about yearly expenditures; expenses vary according to the nature of the curriculum, the place of residence (whether in Tennessee or in another state or country), and the student's own habits and needs. In any student body there are so many different tastes, as well as such a wide range of financial resources, that each student must determine his budget in keeping with his own needs and financial condition. It is possible to live simply, and to participate moderately in the life of the student community, on a modest budget. The best help the University authorities can offer the student in planning his budget is to inform him of certain definite expense items and to acquaint him with others for which he will in all probability have to provide.

The information in this section concerning tuition, fees, deposits, financial aid, etc. is applicable only to students enrolled in the graduate school and departments of the University. Similar information for students in the undergraduate school and The School of Law is available in the bulletins of those schools.

The listing of any fee or incidental charge in this catalog does not constitute a contract between the University and the student. Because of rapidly changing conditions it may become necessary to alter a fee structure before the next edition of the catalog is published. As a condition of registration each student will pay the fees in effect at the time he registers.

APPLICATION FEE

Each student submitting an application for admission to the Graduate School must pay, at the time he submits his application, a non-refundable fee of \$5.00.

TUITION

No charge is made for tuition to bona fide residents of the State of Tennessee; non-residents are charged \$112.50 per semester (for full-time students) or \$12.00 per semester hour (for part-time students).

The following policy is applied by the State Board of Education in classifying students as residents or non-residents for purpose of assessing tuition charges:

As a general rule the residence of a student is presumed to be that of his parents or guardians on the date of his enrollment at Memphis State University. "Residence" is interpreted to mean the state in which the parents or guardians are domiciled. "Guardian" is interpreted to mean a bona fide legal guardian appointed by the courts for purposes other than

the establishment of residence for the purpose of avoiding payment of non-resident tuition. The residence of a married student (minor or adult) or the residence of an unmarried adult student shall be presumed to remain that of his parents or guardians unless he has independently established a residence of his own. The fact that such a student owns and dwells in his own home in Tennessee shall be sufficient evidence to classify him as a Tennessee resident.

The office of the Dean of Admissions and Records shall make the original decision concerning residence classification. The student may appeal this decision to the Committee on Residency; he may also petition this committee at a later date, if circumstances change, to reconsider his classification. Further information about residence classification may be obtained from the office of the Dean of Admissions and Records.

MAINTENANCE FEE

All students, whether resident or non-resident, pay a maintenance fee of \$107.50 per semester (for full-time students) or \$12.00 per semester hour (for part-time students). This fee covers certain expenses for class instruction and for full-time students, it also covers health service; admission to home athletic events, concerts, plays, social and other student-sponsored activities; and a subscription to *The Tiger Rag*, the student newspaper.

COURSES IN APPLIED MUSIC

Additional fees are charged for private lessons offered by the Department of Music, listed in the section beginning on page 87. The fee for courses in brasses, organ, percussion, piano, strings, and woodwinds is \$33.75 per semester hour; the fee for courses in voice is \$60.00 per semester hour.

THE SUMMER SESSION

The Summer Session consists of two separate terms of approximately six weeks each. Charges are assessed, however, not by the term but either (1) for the entire two-term Session or (2) on a semester hour basis. The charge for the entire Session (during which the student may take a maximum of twelve semester hours) is \$75.00 to residents of Tennessee, \$150.00 to non-resident. The semester-hour charge is \$12.00 per semester hour to residents, \$24.00 per semester hour to non-residents.

The student must indicate his choice of payment plan (either for the full two-term Session or per semester hour) at the time of his initial registration; he may not shift from one plan to the other thereafter. No part of his payment is returnable unless he withdraws from the University within the period during which refunds are allowed. If, for example, he pays for the entire Session and then enrolls for fewer than the maximum

number of hours allowed him, or if he decides to attend only one term, no part of his \$75.00 (or \$150.00) payment will be refunded. The student who wishes to attend for only one term or to take fewer than seven semester hours in two terms should, for his own benefit, pay at the semester-hour rate.

REFUNDS

If a student withdraws from the University within seven days after the beginning of classes for the term, a refund will be made of 80% of his maintenance fee and tuition (if any). Each week thereafter, the amount will be reduce 20%. *All other fees are non-refundable.* The time is adjusted for the shorter summer session.

RESIDENCE HALLS

Charges for rooms in University residence halls are indicated below:

	PER SEMESTER	PER SUMMER TERM
Rawls Hall and Robison Hall (air conditioned)	\$135.00	\$ 37.50
Highland Towers (air conditioned and full meals)	\$462.50	\$155.00
All other residence halls	\$112.50	\$ 31.25

(The above rates do *not* include cost of telephone service nor of post office box rental.)

An application for a dormitory room must be accompanied by a check or money order for \$25.00 which remains on deposit for the academic year or until the student withdraws from the University. Refunds, less charges for lost keys and damages, are made upon termination of occupancy with the approval of the Dean of Men or the Dean of Women. The student, however, may previously have requested that this deposit be transferred as a deposit on a room for a succeeding term. The total deposit is refundable upon certification of the Dean of Men or the Dean of Women up to July 1 for a room reserved for the following fall term; after that date and prior to August 15, only \$10.00 of the deposit will be refunded. Cancellation for the spring and summer terms must be made not later than fifteen days before the first day of registration for the term for which the reservation has been made if the deposit is to be refunded. Reservations must be made each spring for the following fall.

MEALS

The University Cafeteria and the Student Center Snack Bars are open to all students; they provide wholesome food at reasonable prices.

LABORATORY DEPOSITS

Certain courses in chemistry and physics require breakage deposits, any unused portion of which is refunded.

LATE REGISTRATION

Students who do not complete registration during the official registration period will be charged \$5.00 for the first day after the official registration period and \$1.00 per day thereafter.

ADDING AND DROPPING COURSES

A charge of \$3.00 per course will be made for each course which is added or dropped after the student has completed registration.

LATE EXAMINATIONS

A student who is permitted to take a final examination at a date later than the one on which the examination was originally scheduled will be charged \$1.00 per examination.

TRANSCRIPTS

One transcript of the student's academic record at Memphis State University is furnished free; a charge of \$1.00 is made for each additional copy requested. Transcripts are issued only at the request of the student or his authorized agent. No transcript will be provided for a student who has any financial indebtedness to the University.

THESIS

The student will be required to present a receipt from the Business Office to the Graduate Office showing that he has paid a fee of \$2.50 for each copy of his thesis which is to be bound.

DIPLOMA FEE

Each candidate for a degree from Memphis State University pays a \$15.00 fee to cover cost of the diploma, rental of cap and gown, and incidentals connected with the commencement exercises. This fee must be paid thirty days before graduation.

AUTOMOBILE REGISTRATION

Each person who expects to operate and park an automobile on the campus must register it in the traffic office (Room 130, Administration Building) and pay \$3.00 for an official permit, valid from September through August.

IDENTIFICATION CARDS

The University issues to each student who has paid the full registration fee an identification card, including his photograph, personal description, and certificate that he is a regularly enrolled student. This card admits the student to all home athletic events and to other student-sponsored activities; it may also be used as a convenient means of identification for the cashing of personal checks at the University Bookstore.

BAD CHECKS

It is expected that a check given in payment of any fee will clear the bank on which it is drawn. If a check is returned, the fee is assumed to be unpaid and charges for late payment will be assessed. A \$2.00 service charge will be assessed for each bad check, whether given in payment of fees or cashed by the University for the personal convenience of the student.

SUMMARY OF EXPENSES, 1966-67

(This table is applicable only to students in the graduate school and departments; charges for The Undergraduate School and for The School of Law are detailed in the bulletins of those schools.)

FALL AND SPRING SEMESTERS

	RESIDENTS	NON-RESIDENTS
Per semester (full time student)	\$107.50	\$220.00
Per semester hour (part-time student)	\$ 12.00	\$ 24.00

THE SUMMER SESSION (two terms)

	RESIDENTS	NON-RESIDENTS
Per session (two terms)	\$ 75.00	\$150.00
Per semester hour	\$ 12.00	\$ 24.00

STUDENT HOUSING

	PER SEMESTER	PER SUMMER TERM
Rawls Hall and Robison Hall (air conditioned)	\$135.00	\$ 37.50
Highland Towers (air conditioned and full meals)	\$462.50	\$155.00
All other residence halls	\$112.50	\$ 31.25

(Rates do not include cost of telephone service nor of post office box rental.)

APPLIED MUSIC COURSES

Private lessons in brasses, organ, percussion, piano, strings, and woodwinds:	\$33.75 per semester hour
Private lessons in voice:	\$60.00 per semester hour

INCIDENTAL CHARGES

Adding courses	\$ 3.00 per course
Application for admission	5.00 per application
Automobile registration	3.00 per automobile
Diploma	15.00 payable once
Dropping courses	3.00 per course
Late examinations	1.00 per examination
Late registration	5.00 for first day after official registration period; 1.00 per day thereafter
Thesis	2.50 per copy to be bound
Transcripts	1.00 per copy after first copy

DEPOSITS

Dormitory rooms	\$25.00 (refundable, less charges, upon termination of occupancy)
Laboratory breakage	Variable (refundable less charges)

ADDITIONAL CHARGES

The University reserves the right to increase the charges listed herein or to add new ones whenever such increases or additions are found to be necessary.

ADVANCED DEGREES OFFERED

Every graduate student is expected to comply with the general requirements for the Master's degree as outlined elsewhere in the *Graduate School Bulletin*. In addition to the general requirements, the student will be expected to conform to the requirements of one of the departments of the University. The choice of the department in which the student is to major may, in large part, determine the degree he will seek, since the graduate degree should reflect the type of program the student has followed.

DEGREE DESCRIPTIONS

The program for the MASTER OF ARTS degree is generally open to those who have completed the Bachelor of Arts degree. Others may enroll for the M.A. degree if undergraduate prerequisites are met. Departmental requirements with reference to thesis, language, and course requirements are outlined on pages 32 to 41 of the Bulletin. Students majoring in the following areas are generally expected to seek the Master of Arts degree: English, Geography, History, Modern Languages, Music (Applied), Psychology, Sociology, and Speech and Drama. Economics majors may choose to apply for this degree also.

The programs for the MASTER OF ARTS IN TEACHING degree are designed for a selected group of students who offer outstanding undergraduate academic records. Either of two programs may be elected by the student in consultation with his major professor:

A. FOR STUDENTS SEEKING CERTIFICATION: A minimum of 24 hours of Education courses and a minimum of 12 hours in non-Education courses, as approved by the student's major professor. Generally, the student will take his non-Education courses in the field of his undergraduate major.

Candidates for the Master of Arts in Teaching degree who have not completed the laboratory experiences at the undergraduate level will be required to do so at the graduate level, in which case a minimum of 36 hours is required for the degree.

B. FOR STUDENTS ALREADY CERTIFIED: A minimum of 18

hours of Education courses and a minimum of 15 hours of non-Education courses, as approved by the student's major professor.

In the event the student wishes to change his teaching field from his undergraduate major he will be required to meet the departmental prerequisites and teaching certification requirements. The student may have a distributive endorsement if he is seeking a teaching endorsement in more than one field. Students may seek certification endorsement in any graduate area for which there is an undergraduate endorsement.

The Master of Arts in Teaching degree may be earned without the presentation of a thesis. No provision is made for thesis credit within the total hours required for the degree.

The program for the **MASTER OF BUSINESS ADMINISTRATION** degree is generally open to those who have completed the Bachelor of Business Administration degree or its equivalent. Others may enroll for the M.B.A. degree if undergraduate prerequisites are met. The departmental requirements are found on pages 32 to 41 of the Bulletin. The Business Administration degree is awarded to those students who major in the following areas: Accountancy, Economics, Finance, and Management.

The program for the **MASTER OF EDUCATION** degree is generally open to those who have completed the requirements for teacher certification. Departmental requirements with reference to thesis, research and course requirements are found on pages 32 to 41 of the Bulletin. Those who are majoring in the following areas may seek the M.Ed. degree: Elementary Education, Secondary Education, Special Education, Guidance and Counseling, Reading, Health and Physical Education, Music Education, Educational Administration and Supervision, and Business Education and Office Management.

The program for the **MASTER OF SCIENCE** degree is generally open to students with a science background. Departmental requirements with reference to thesis, language, and course requirements are outlined on pages 32 to 41 in the Bulletin. Those who are majoring in the following areas may seek the Master of Science degree: Biology, Chemistry, Engineering, Geography, Mathematics, and Psychology.

The program for the **MASTER OF SCIENCE IN TEACHING** degree is generally open to those who have completed a teacher preparation program and wish to improve themselves as teachers of science in the secondary schools. Students who are accepted for this program should have completed a teacher preparation program. Those who have not will be required to qualify for certification as a teacher before the degree will be awarded. The degree requirements are found on pages 32 through 41 in the Bulletin. Major or minor areas of emphasis for this degree will be in Biology, Chemistry, Mathematics, and Physics. Minor areas of emphasis only may be Geography, or Physical Science. The student may, upon approval of his adviser, minor outside of the field of science.

General Requirements for the Master's Degree

Every graduate student and every prospective graduate student is expected to make himself thoroughly familiar with the regulations of the Graduate School and the requirements for degrees. Failure to follow the regulations and requirements almost inevitably results in complications for which the Graduate School cannot assume responsibility.

To facilitate communication, graduate students are expected to notify the Graduate Office of their changes of address. They should remember that all details connected with their work center in the Graduate Office.

ADMISSION TO CANDIDACY FOR THE MASTER'S DEGREE

To become a candidate for a degree, the student must file an application on blanks available at the office of the Dean. The student must indicate on the application the degree program he is choosing. The application must contain plans for a complete program of graduate study and be approved by a faculty adviser in both the major and minor areas.

Before the "Application for Admission to Candidacy for the Master's Degree" can be approved and the applicant can be officially admitted to candidacy for a Master's degree, the student must have satisfied the following requirements:

1. He must have completed some graduate work in residence.
2. He must have completed prerequisite undergraduate requirements of not less than 18 semester hours in his graduate major area and not less than 6 semester hours in his graduate minor area, except in special cases approved by the Dean of the Graduate School and the Chairman of the department concerned. For details as to major and minor requirements, see pages 32 to 41.
3. He must have at least a "B" average on all graduate work which has been completed during the six calendar years immediately preceding the date of the application for degree candidacy.
4. The general field of his thesis must have been approved, if his program includes the requirement of a thesis.
5. His graduate work up to this point must be acceptable in quality and quantity to his major and minor departments as attested by their approval of his program.
6. His entire program must conform to the general regulations of the Graduate School and the requirements for his particular major and minor.

Every student who files an "Application for Admission to Candidacy for the Master's Degree" will receive from the Graduate Office an approved copy of the application or a letter explaining why approval has been withheld.

SEMESTER HOUR REQUIREMENTS

The Master's degree program shall include 30-33 semester hours of course work as follows, 18-21 semester hours in a major area, 8-12 semester hours in a minor area, 4 semester hours or less in general electives.

A thesis of 3 to 6 semester hours may be presented as partial completion of degree requirements. If a thesis is presented, the student may be graduated with a total of 30 semester hours of which a minimum of 18 semester hours, inclusive of the thesis, shall be in the major field.

If no thesis is submitted, the overall degree requirements shall be 33 semester hours, with a minimum of 21 semester hours in the major area.

All requirements for the degree must be completed within six years from date of the candidate's original registration for graduate courses.

At least 18 semester hours of the courses in a student's program must be of the type designated as primarily for graduate students (7000 level courses). At least 12 semester hours of this must be done in the major. The department in which the minor is taken will determine whether or not any 7000 level courses are required in the minor area.

Work done by graduate students registered for 6000 courses must be of a higher quality than that required of undergraduates. Also, the graduate student is required to do additional work. This may consist of research or of such other work as the instructor may demand.

Courses of 6000 level are offered as undergraduate courses with 4000 level numbers. A student may not receive credit for a 6000 level course if he has credit at the 4000 level.

AMOUNT OF WORK PERMITTED

Sixteen semester hours shall be the maximum load for students devoting full time to graduate study. Only full time students may register for more than twelve semester hours of course work in any one semester, including courses on campus, extension courses, and courses to be transferred from other institutions.

Graduate students who are employed on a full time basis may not register for more than two courses.

A student may register for 18 semester hours during his final academic semester for the purpose of graduating, if he has had a 3.5 average on previous graduate studies completed.

Certain residence courses, designated as "problems courses," are described in this bulletin. Seven semester hours of credit through problems courses may be applied to degree requirements; however, not more than four semester hours may be applied toward the major or more than four semester hours toward the minor. A file of the work submitted by graduate students for credit in problems courses will be maintained in the Graduate Office, and graduate students will not be allowed to register for more than one problems course in any one semester or full summer session.

MINIMUM RESIDENCE REQUIREMENTS

Completion of two semesters of residence study is required. It may be computed on the basis of a minimum of twelve semester hours of credit as the equivalent of one semester of residence.

CREDIT FOR WORK COMPLETED ELSEWHERE AND BY EXTENSION

There is no automatic transfer of credit toward a graduate degree, but, in general, residence work completed at another accredited graduate school may be accepted for not more than six semester hours of course credit toward a Master's degree. No transfer of credit will be approved if the grade point average for graduate work attempted is less than three on a four point system. However, such work will not reduce the minimum residence requirement for the Master's degree.

Six semester hours of course work completed through the Memphis State University Extension Division may be applied toward degree requirements; however, not more than three semester hours may be applied toward major requirements or more than three semester hours toward minor requirements.

Extension work taken with another institution is not transferable.

Six semester hours of transfer work may be applied toward degree requirements; however, not more than four semester hours may be applied toward major requirements or more than four semester hours toward minor requirements.

Not more than nine semester hours of any combination of extension work and work completed elsewhere may be credited toward the course requirements for the Master's degree.

Graduate credit is never granted for courses taken by correspondence. The grading system in the Graduate School is as follows:

Grade of A—Exceptionally high scholarship—four points for each semester hour.

Grade of B—Superior scholarship—three points for each semester hour.

Grade of C—Average scholarship—two points for each semester hour.

Grade of D—Poor but passing—one point for each semester hour.

Grade of F—No point value.

Grade of I—Incomplete.

Grade of P—In progress.

An average grade of "B" must be maintained in ALL graduate work, and credit earned with a "D" grade may not be counted toward meeting the major or minor requirements for the Master's degree.

Work with a grade of "F" will be included in the grade average computation.

Not more than 7 semester hours of credit with a grade of "C" may be applied toward meeting the degree requirements, and not more than 4 semester hours of "C" may be accepted in the major, and not more than 4 semester hours of "C" in the minor area.

A grade of "I" will become an "F" unless removed within the first four weeks of the next semester that the student is in residence. The deficiency, however, must be corrected within one calendar year from the date the "I" was recorded.

Instructors of problems courses shall be allowed to give a grade for "work in progress" (P) to extend the time for the completion of such research. In the event this time extension is for longer than one calendar year, the responsible instructor shall present a written recommendation to the Office of the Dean of Admissions and to the Dean of the Graduate School for an official dropping of the course or for the assignment of a specific grade.

A "P" grade on a *thesis* may be extended for a period of one year from the recorded date without special permission or penalty. Requests for more than one year extension of time must be made in writing.

COMPREHENSIVE EXAMINATION FOR THE MASTERS DEGREE

Before being recommended for graduation, every candidate for the Master's degree is required to pass a final comprehensive examination in his major subject and in his minor subject; it may be oral or written or both, at the discretion of the departments concerned.

A student will not be permitted to take the comprehensive examination before his application for Degree Candidacy has been approved.

It is the student's responsibility to confer with his major and minor departments regarding the time and place of the examination. No reminders will be sent him by the departments or by the Graduate Office.

STATEMENT OF INTENTION TO GRADUATE

Candidates for the Master's degree must file a statement of intention to graduate with the Dean of the Graduate School at the beginning of the semester, or session, in which the academic requirements for the degree are to be completed. The degree desired shall be shown on the application form.

Programs of Study

A variety of programs of study leading to the Master's degree are offered in the Graduate School of Memphis State University. Candidates for a degree must design a degree plan which has the approval of their major adviser. This plan will include both a major and minor area of study, and the degree sought.

MAJOR AREAS:

- 1.—In the department of ACCOUNTANCY, graduate students who select Accountancy as a major area will consult the departmental chairman or with the adviser assigned to him as to the program of study; however, Accounting 7110, Accounting Theory I (3), and Accounting 7830, Current Accounting Problems I (3), are required courses in the Accountancy major.
- 2.—In the department of BIOLOGY, graduate students who select Biology as a major area will consult their major adviser as to the program of study; however, Biology 7996 (6), is required of all those who major in Biology.
- 3.—In the department of BUSINESS EDUCATION AND OFFICE MANAGEMENT, graduate students who select this area as a major area will consult their major adviser as to the program of study.
- 4.—Students majoring in CHEMISTRY for the Master of Science degree are required to present as a prerequisite 4 years of chemistry including one year each of general, organic, and physical, and one semester of analytical and at least three semesters of German including one semester of scientific German. Students lacking any of these prerequisites may be admitted with appropriate deficiencies which must be removed without graduate credit. Any student proficient in German, but lacking formal college credit, may petition the head of the Department of Chemistry for permission to take an examination in lieu of enrolling in the courses.

General Master's degree requirements are found on page 28. Departmental requirements consist of the satisfactory completion of 30 hours of graduate work including:

- A. Chemistry 7111, 7210, 7310, and 7410.
 - B. Sufficient additional courses (excluding research) to make a minimum of 18 hours in chemistry and a minimum of 24 hours of graduate work. Courses outside the chemistry department must be approved by the student's major adviser and the chairman of the department of chemistry.
 - C. Participation in seminar during the entire period of residence (excluding summer terms) up to a maximum of 4 semesters. A minimum of 2 semesters must be presented for a degree and no more than 3 hours credit may be counted toward the 30 semester hours required for graduation.
 - D. Research and a thesis (Chemistry 7996) acceptable to the students committee (6 hrs.).
 - E. A final oral examination.
 - F. A student must have a 3.0 (B) average on all courses presented for graduation exclusive of research (Chemistry 7996) and seminar (Chemistry 7913, 7923, 7933, and 7943).
- 5.—In the department of CURRICULUM AND INSTRUCTION, a student may select from several programs, each of which require a nine semester hours Core. Consisting of Education 7001, 7521, and 7401.

Additional requirements are as follows:

- A. Master of Arts in Teaching (for those seeking secondary school certification).

This program is designed for a selected group of students who have not completed an undergraduate teacher preparation program but who have exhibited outstanding academic ability, and who desire to qualify for teaching careers in the secondary school. Courses Required: Education 7121, 7301, 6841, and twelve semester hours in areas of endorsement. Total 36 semester hours.

- B. Master of Arts in Teaching (for those who hold secondary school certification).

Courses Required: 6112, 7301, 7511, and fifteen semester hours.

- C. Master of Education in Secondary Education (for those already certificated).

Courses Required: 6112, 7511, 7301, 7100, and twelve semester hours of electives (of which at least three hours must be in the student's endorsement). Total 33 semester hours.

- D. Master of Education in Elementary Education (for those who will have at least one year of successful teaching experience before becoming a candidate for the degree).

Courses Required: 7111, 7243, *6252, *6262, *6272; three semester hours selected from Library Service, Children's Literature, Language Arts, 7000 level reading course, Special Education, Education 7253; three to four semester hours of Education electives; and three semester hours from Arts and Sciences. Total 33 semester hours.

E. Master of Education in Guidance (for elementary teachers).
Courses Required: Education *6611, 7621, 7631, 7651, 7661, 7681, 7692; electives three semester hours. Total 33 semester hours.

F. Master of Education in Guidance (for secondary teachers).
Courses Required: *6611, 7121, 7631, 7651, 7661, 7681, 7691; electives three semester hours. Total 33 semester hours.

G. Master of Education in Reading (for those who will have at least one year of successful teaching experience before becoming a candidate for the degree and wish preparation either as reading specialists or reading clinicians).

Courses Required: either *6242 or 7243, *6344, 7244, 7245; either 7442 and 7843 or 7841 and 7842; six semester hours electives. Total 33 semester hours.

H. Master of Education in Special Education (Mental Retardation).

Courses required: Special Education *6151, *6163, *6164, or *6165, 7151, 7161, 7162, and six semester hours of electives. Total 33 semester hours.

I. Master of Education in Special Education (Crippled and Special Health Problems).

Courses Required: Special Education *6151, *6171, *6172, *6173, *6174, 7151, and nine semester hours of 7000 level electives. Total 33 semester hours.

6.—In the department of **ECONOMICS AND FINANCE**. Students who select either area as a major will consult with their major advisers as to the program of studies.

7.—In the department of **EDUCATIONAL ADMINISTRATION AND SUPERVISION** all students majoring in the department who are seeking certification will be required to complete a core of 12 semester hours, as follows: Education 7100, 7200, 7300 and *6400.

*Not required if equivalent course taken at the undergraduate level. (Substitutions must be approved by the adviser.)

- A. Preparation for the superintendency requires the following specialized courses: Education 7101, 7120 and 7140, and one other course from departmental offerings.

Electives: Nine semester hours outside the department of Educational Administration and Supervision.

- B. Elementary Administration and Supervision requires the following specialized courses: Education *6110, 7220, 7401, and one other course from departmental offerings.

Electives: Nine semester hours outside the department of Educational Administration and Supervision.

- C. Secondary School Administration and Supervision requires the following specialized courses: Education 7150, 7210, 7401, and one other course from departmental course offerings.

Electives: Nine semester hours outside the department of Administration and Supervision.

- D. General Educational Administration (not preparatory to certification) Core requirements are Administration 3 semester hours, Supervision 3 semester hours, and Research 3 semester hours.

Specialized courses (12 semester hours) may be selected from departmental offerings.

Electives: Twelve semester hours to be selected outside the department of Educational Administration and Supervision.

- 8.—In the division of ENGINEERING, graduate students who are eligible to enroll will consult their major adviser as to a program of study. To be eligible to enroll, the student must hold a degree in Engineering from an accredited institution, or meet the alternate requirements. The alternate plan requires a baccalaureate degree with emphasis in mathematics, physical science, and applied science, as well as social science and the humanities. The major professor or the Graduate Dean will provide detailed information upon request.

- 9.—In the department of ENGLISH, graduate students who select English as a major area will consult their major adviser as to the program of study. The basic requirements are as follows:

Prerequisites: A minimum of 18 hours in upper division English courses.

Requirements: A minimum of 18-21 hours in graduate English courses, at least 12 of which must be in courses numbered above

*Not required if equivalent course taken at the undergraduate level. (Substitutions must be approved by the adviser.)

7000. Each student's program must include the following:

- A. Bibliography and Methods of Research (3): English 7801.
- B. Chaucer *or* Studies in Medieval Literature (3): English 6231 or 7211.
- C. Studies in Shakespeare *or* Studies in Renaissance Literature (3): English 7231 or 7212.
- D. The literature of two additional periods of English or American literature (6).
- E. All graduate courses in English (3-6): selection to be made with approval of adviser.

Oral comprehensive examination.

Reading knowledge of one foreign language (French, German, Latin, or Greek), to be demonstrated by (1) 12 hours credit at the minimum grade in each course of C, earned within five years of entry into Graduate School or by (2) reading examination by date of completion of 9 semester hours of graduate courses in English.

Thesis (3 or 6)—optional

- 10.—In the department of GEOGRAPHY, graduate students who select Geography as a major area will consult their major adviser as to the program of study.

All graduate majors in the department of Geography must have credit for Geography 6111, 6121, and 7503 or their equivalents before being admitted to candidacy.

- 11.—In the department of HEALTH, PHYSICAL EDUCATION, AND RECREATION, graduate students may place emphasis in the areas of Health, Physical Education, or Recreation. A minimum of 21 semester hours in graduate courses is required. Their major adviser should be consulted as to their program of study.

- 12.—In the department of HISTORY, graduate students who select History as a major area will consult their major adviser as to the program of study. The basic requirements are as follows:

Prerequisites: A minimum of 18 semester hours in undergraduate history, except in special cases approved by the Dean of the Graduate School and the Chairman of the Department of History.

Requirements: (1) a minimum of 18 semester hours in graduate history courses, at least 12 of which must be in 7000 level

courses; (2) Each student must complete History 7000; (3) A thesis (6 hours) is required of all students intending to pursue graduate work beyond the Master's level. For all others the thesis is optional; (4) If a thesis is written, the degree may be completed with 30 semester hours; if no thesis is written, the overall degree requirements are 33 semester hours, with a minimum of 21 semester hours in the major; (5) Graduate history majors must pass an oral comprehensive examination in the major and minor fields before being recommended for graduation.

- 13.—In the department of MANAGEMENT, students will consult with the Departmental Chairman or with the adviser assigned to him by the Graduate Dean as to the program of study.
- 14.—In the department of MATHEMATICS, graduate students who select Mathematics as a major area will consult their major adviser as to the program of study.
- 15.—In the Department of MODERN LANGUAGES graduate students who select French, German, or Spanish as a major area will consult with the department coordinator for graduate studies as to the program of study.

Prerequisites: A minimum of 18 undergraduate hours or its equivalent in the major (French, German, or Spanish); 30 hours are recommended.

Requirements: A total of 21 semester hours in the major, at least 12 of which must be in courses numbered above 7000. Each student's program must include the thesis of three hours and the courses prescribed by his permanent adviser and the department coordinator.

An oral comprehensive examination is required: a written examination may also be given at the discretion of the examiners.

A reading knowledge of a second language is required (except English or any language native to the student), to be demonstrated by examination. The examination will assume the completion of two years undergraduate study or its equivalent in the language. The language elected must be approved by the department coordinator.

Every M.A. candidate in Modern Languages will be expected to have a thorough mastery of the English language.

- 16.—In the department of MUSIC, concentration may be in either
 - A. Music Education, or
 - B. Applied Music (Composition, piano, voice, organ, violin, violoncello, harp, winds, percussion).

Each student majoring in this department must select one of the above concentration areas and must complete the following courses in a common core:

Music 7031 and 7032—Theory I and II (6)

Music 7131 and 7132—A Study in Musical Styles (6)

Those in Music Education must complete the following courses in addition to the twelve hours in the common core:

Music 7133—Choral Literature and Techniques (3) OR Music 7134,
Instrumental Literature and Techniques (3)

Music 7231—Advanced Conducting (3)

Music 7232—Music Education Seminar (3)

Applied Music (6)

Professional Education (6)

Those in Applied Music must complete the following courses in addition to the twelve hours in the common core:

Applied Music (12)

Recital, or Thesis (3)

Humanities (6)

Further information concerning admission prerequisites to graduate theory and to applied music courses may be obtained by writing to the Chairman of the Department of Music.

17.—In the department of PSYCHOLOGY, graduate students who select Psychology as a major area will consult their advisory committee as to the program of study. The student may work toward either the M.A. Degree or the M.S. Degree in Psychology. The particular degree selected will be determined in part by his undergraduate background and by his minor area as a graduate student. A thesis is required for the M.S. Degree but is optional for the M.A. Degree. All graduate students are required to take Psychology 6301, Advanced Quantitative Methods, unless they have completed a similar course as an undergraduate. The graduate student may complete all of his work for the degree in the Department of Psychology or he may elect to minor in an area approved by his advisory committee.

18.—In the area of SCIENCE FOR TEACHERS, a Master of Science in Teaching degree will be awarded to those students who complete a program designed for high school science teachers. The student should consult the chairman of the department of Biology, Chemistry, Mathematics or Physics according to his interest. The departmental chairman may approve or require certain courses

in any or all of the following areas, natural sciences, physical sciences, geography and mathematics.

- 19.—In the department of SOCIOLOGY, graduate students who select sociology as a major area will consult with their major adviser as to their program of study. The following courses are required: Sociology 7110, 7210, 7320, 7696, and 7996 (Thesis). Each student majoring in sociology shall be required to pass a reading examination in an approved foreign language.
- 20.—Students who choose to major in SPEECH AND DRAMA will consult their major adviser as to the program of study. Each student's program must include Speech 7100, Bibliography and Methods of Research (3).

MINOR AREAS:

- 1.—In the department of ACCOUNTANCY, 9 semester hours as approved by the minor adviser.
- 2.—In the department of BIOLOGY, 8 semester hours as approved by the minor adviser.
- 3.—In the area of BUSINESS EDUCATION AND OFFICE MANAGEMENT, 9 to 12 semester hours as approved by the minor adviser.
- 4.—In the department of CHEMISTRY, 8 semester hours as approved by the minor adviser.
- 5.—In the department of CURRICULUM AND INSTRUCTION, 9 semester hours as approved by the minor adviser including Education 7401.
- 6.—In the department of EDUCATIONAL ADMINISTRATION AND SUPERVISION, the following courses are required for a minor.
 - A. Education 7100 Public School Organization and Administration (3).
 - B. Six semester hours selected courses.
- 7.—Requirements in the department of ENGLISH are as follows:

Prerequisites: A minimum of 12 hours in upper-division English courses.

Requirements: A minimum of 9-12 hours in graduate English courses, at least 6 of which must be in courses numbered above 7000.

Each student minoring in English must complete at least 3 hours in English literature before 1800 and at least 3 hours in English literature after 1800.

- 8.—In the department of GEOGRAPHY, 9 semester hours as shown below:
 - A. M.A. Degree requirements—9 semester hours as approved by minor adviser, with a maximum of 3 semester hours in the earth sciences.
 - B. M.S. Degree requirements—9 semester hours as approved by minor adviser, with a minimum of 6 semester hours in the earth sciences.
- 9.—In the department of HEALTH, PHYSICAL EDUCATION, AND RECREATION, 9 semester hours as approved by the minor adviser, 3 semester hours of which must be selected from the following two courses:

P.E. 7124—Curriculum Construction in Health Education and Physical Education (3).

P.E. 7144—Development and Supervision of an Elementary School Health and Physical Education Program (3).
- 10.—Requirements in the department of HISTORY are as follows:

Prerequisites: A minimum of 9 semester hours in undergraduate history, except in special cases approved by the Chairman of the Department of History.

Requirements: (1) A minimum of 9 semester hours in one field of history (such as American, Latin American, European); (2) At least three hours must be in 7000 level courses.
- 11.—In the broad area of the HUMANITIES, 12 semester hours, to be selected from History, English, Mathematics, Philosophy, Psychology, and Speech and Drama.
- 12.—In the area of LIBRARY SERVICE, 9 semester hours may be taken to satisfy the minor requirement.
- 13.—In the department of MANAGEMENT, FINANCE AND ECONOMICS, 9 semester hours as approved by the minor adviser.
- 14.—In the Department of MARKETING, 9 semester hours as approved by the minor adviser.
- 15.—In the Department of MATHEMATICS, 9 semester hours as approved by the minor adviser.
- 16.—Requirements in the department of MODERN LANGUAGES are as follows: 9 hours of graduate courses as approved by the adviser. Prerequisites: A minimum of 12 semester hours of undergraduate courses are required in the minor (French, German, or Spanish). In some cases, additional undergraduate work may be required.

- 17.—In the department of MUSIC, 12 semester hours, to be divided into two six-hour sequences as approved by the minor adviser.
- 18.—In the department of PHILOSOPHY, 9 semester hours as approved by the minor adviser.
- 19.—In the department of PHYSICAL SCIENCES, 9 or 12 semester hours in courses approved by the chairman of the department and the student's major professor.
- 20.—In the department of PHYSICS, 8 semester hours as approved by the minor adviser.
- 21.—In the department of POLITICAL SCIENCE, 9 semester hours as approved by the minor adviser.
- 22.—In the department of PSYCHOLOGY, 9 semester hours as approved by the minor adviser.
- 23.—In the broad area of SCIENCE, 12 semester hours to be selected from Biology, Chemistry, Mathematics, Physics, and certain designated courses in Geography.
- 24.—In the area of SCIENCE FOR TEACHERS, 12 semester hours to be approved by the adviser from the Department of Biology, Chemistry, Mathematics or Physics.
- 25.—In the broad area of SOCIAL SCIENCE, 12 semester hours, to be selected from History, Geography, Political Science and Sociology.
- 26.—In the department of SOCIOLOGY, 9 semester hours as approved by the minor adviser.
- 27.—In the department of SPEECH AND DRAMA, 9 semester hours as approved by the minor adviser.

Course Offerings

Accountancy

MR. THOMPSON, *Chairman*, MR. CRAWFORD, MR. CUMMINGS, MR. L. CURBO,
MR. R. CURBO, MR. FITZPATRICK, MR. HALL, MR. SPICELAND, MR. WRAY

- 6210. Advanced Accounting I. (3). (G-421)**
Partnerships, consignments, installment sales, insurance, statement of affairs, receiver's accounts, statement of realization and liquidation, annuities, estates and trusts. PREREQUISITE: Acctg. 3120. Fall semester.
- 6220. Advanced Accounting II. (3). (G-422)**
Agencies, home and branch offices, consolidations, mergers, foreign exchange. PREREQUISITE: Acct. 3120. Spring semester. (This course may be taken before Acctg. 4210.)
- 6240. Auditing I. (3). (G-424)**
Ethics in accounting practices, auditing standards and procedures, programs of audit of various accounts, construction and indexing of various papers, reports to clients. Fall semester. PREREQUISITE: Acctg. 3120 and 3320.
- 6250. Auditing II. (3). (G-425)**
Application of auditing principles to verification of financial statements, preparation of reports, case studies applicable to specific industries, current trends. A practice audit is carried out. PREREQUISITE: Acctg. 4240. Spring semester.
- 6450. Accounting Systems. (3). (G-445)**
Problems involved in designing accounting installations for various types of businesses, including the designing of clerical departments and planning of required mechanical devices. PREREQUISITE: Acct. 3120. Spring semester.
- 6460. Controllership. (3). (G-446)**
Training in the field of administrative accounting, duties and functions of the controller, organization of the controller's office. PREREQUISITE: Acctg. 3320. Fall semester.
- 6510. Federal Income Tax I. (3). (G-451)**
Regulations pertaining to income taxation of individuals and partnerships. PREREQUISITE: Acctg. 3110 and 3120, or permission of instructor. Fall semester.
- 6520. Federal Income Tax II. (3). (G-452)**
Laws and regulations pertaining to taxation of corporations, estates and fiduciaries. Also considered: Federal Gift Taxes; Federal Death Taxes; F. I. C. A. Tax, Federal and State Unemployment Taxation. PREREQUISITE: Acctg. 4510. Spring semester.
- 6540. Governmental Accounting. (3). (G-454)**
Accounting theory and practice applicable to Federal, State, and Local Government; and to nonprofit institutions; budgetary control; classification, control, and use of funds; financial statements and reports. PREREQUISITE: Acctg. 3120. Fall semester.
- 7110. Accounting Theory I. (3). (511)**
A study of the broad aspects and objectives of accounting with emphasis on generally accepted accounting principles, modern accounting trends, and contemporary controversial topics, through a study of the current releases of the American Institute of Certified Public Accountants, the American Accounting Association, and other research related to changing accounting concepts.

- 7120. Accounting Theory II. (3). (512)**
A further study of the development of accounting theory and the influence of professional accounting societies and regulatory agencies upon the accounting profession. PREREQUISITE: Accounting 7110.
- 7240. Advanced Auditing. (3). (524)**
Review and refinement of generally accepted auditing standards, procedures and extension of auditing procedures; preparation of audit reports and study of special investigations; study of auditing research bulletins of the American Institute of Certified Public Accountants, and pronouncements of the S. E. C. and other regulatory agencies. PREREQUISITE: Accounting 3240 or 4240 or permission of instructor.
- 7310. Standard Cost. (3). (531)**
Budgets, determination of standards, variances and their functions, cost reports, profit projecting. PREREQUISITE: Acctg. 3320.
- 7510. Advanced Taxation. (3). (551)**
Selected research and study in the taxation of individuals and business organizations by Federal and state governments; preparation of selected state and Federal tax returns including those associated with income, excise, gift, death, sales, and payroll; tax practice and procedures. PREREQUISITE: Accounting 4520 or permission of instructor.
- 7810. Internship in Accounting. (3). (581)**
Graduate students interested in public accounting, after receiving approval of the accounting faculty, are placed in offices of cooperating public accounting firms to receive on-the-job training under the direct supervision of a certified public accountant and the general supervision of the college accounting staff. Credit allowed upon acceptance of report of work done, verified by supervising accountant, and completion of a qualifying examination. Minimum time: 500 hours. Both semesters.
- 7830. Current Accounting Problems I. (3). (583)**
A cross section of problems encountered in CPA examinations, including such items as receiverships, realization and liquidation statements, estates and trusts, cost problems, partnerships, and consolidations. PREREQUISITE: Permission of instructor.
- 7840. Current Accounting Problems II. (3). (584)**
Continuation of study of current accounting problems encountered in CPA examinations; review of business law relating to CPA examinations with emphasis on the Uniform Commercial Code; brief review of accounting theory as it pertains to the CPA examination. PREREQUISITE: Permission of instructor.
- 7910-7912. Problems in Accounting. (1-3). (591)**
Directed independent research projects in an area selected by the student with the approval of the staff member supervising. PREREQUISITE: Accounting 6210 or equivalent.
- 7910. Public Accounting.**
- 7911. Industrial Accounting.**
- 7912. Governmental Accounting.**
- 7995. Thesis. (3). (593)**
Application for writing a thesis must be filled out on an approved form after consultation with the major professor and filed with the Dean of the Graduate School.
- 7996. Thesis. (6). (596)**
Application for writing a thesis must be filled out on an approved form after consultation with the major professor and filed with the Dean of the Graduate School.

Biology

MR. BROWN, *Chairman*, MR. BANCROFT, MR. FEISAL, MR. HOWELL,
MR. LAYNE, MR. LOGAN, MR. PERRY, MR. RUDOLPH, MR. SMITH,
MR. WHALEN, MR. WILHELM, MR. WISE

- 6030. Cellular Physiology. (4). (G450)**
A study of the fundamental unit of all living things. The basic activities of cells are investigated—nutrition, adaption, growth and reproduction.
Two hours lecture; four hours laboratory. PREREQUISITE: Biology 3730.
- 6100. Organic Development (3). (G410)**
The consideration of the theoretical and scientific evidences concerning the origin, development, and establishment of the major groups of living and extinct animals and plants.
PREREQUISITE: one year of biology. Recommended for biology majors and general students as well.
- 6221. Plant Morphology. (4). (G401)**
Comparative studies of general structure of lower plants, exclusive of bacteria and related forms, through the Bryophytes. *Two hours lecture; four hours laboratory. PREREQUISITE: Biology 1200 or its equivalent.*
- 6222. Plant Morphology. (4). (G402)**
A continuation of 6221 in which the vascular plants are considered. *Two hours lecture; four hours laboratory. PREREQUISITE: Biology 1200 or its equivalent.*
- 6231. Plant Physiology. (4). (G426)**
A study of the principles of physiology and their application to the lower plant groups, exclusive of the bacteria and related forms. **PREREQUISITE:** Permission of the instructor. *Two lecture, four laboratory hours per week.*
- 6232. Plant Physiology. (4). (G425)**
A study of the principles of physiology and their application to the living organism as a whole, with emphasis on higher plants. *Two hours lecture; four hours laboratory. PREREQUISITE: Consent of instructor.*
- 6240. Plant Taxonomy. (4). (G420)**
A study of the principles of plant taxonomy. Special attention will be given to the classification of selected vascular plant families. Lectures, laboratory and field trips. **PREREQUISITE:** Consent of the instructor.
- 6260. Histological Technique. (3). (G404-A)**
Method of preparing animal tissues for microscopic study, theories of staining, and preparation of permanent mounts of animal tissues. *One hour lecture; four hours laboratory. PREREQUISITE: Five hours of zoology or consent of instructor.*
- 6400. Advanced Microbiology. (4). (515)**
Advanced theory and principles of Microbiology with emphasis on morphology and bacterial metabolism. **PREREQUISITES:** Biology 3500 and one hour of introductory Biology, one year of inorganic chemistry, with organic chemistry desirable. *Two one-hour lectures, two two-hour laboratories.*
- 6440. Determinative Bacteriology. (4). (505)**
Methods of bacteriological technique, pure culture studies, and classification of bacteria. **PREREQUISITE:** Biology 3500, one year of introductory Biology, one year of inorganic chemistry, with organic chemistry desirable. *Two one-hour lectures, two two-hour laboratories.*
- 6460. Sanitary Bacteriology. (4). (G405)**
A study of micro-organisms in relation to water and sewage; disinfection and disinfectants. *Two hours lecture; four hours laboratory. PREREQUISITE: Biology 3500 or its equivalent.*

- 6560. Microbiology of Foods. (4). (G406)**
Microorganisms in natural and processed foods; origins, nature and effects on foods; enumeration; and the relation to health. **PREREQUISITE:** Biology 3500 or the equivalent. *Two lecture and four laboratory hours per week.*
- 6620. Vertebrate Histology. (4). (G403)**
Microscopic study of normal tissues and organs of the vertebrate body. *Two hours lecture; four hours laboratory.*
- 6630. General Endocrinology. (3). (G440)**
Anatomy and physiology of the organs of internal secretion; role of hormones in metabolism and development. **PREREQUISITE:** Biology 3730. *Three lecture-demonstration hours per week.*
- 6640. Field Zoology. (4). (G440)**
Designed to acquaint the student with a field knowledge of the animals of this locality. Identification, life history, and habitat will be considered. Birds and insects to be omitted. *Two lecture hours; four hours laboratory.* **PREREQUISITE:** eight hours of biology including five hours of zoology.
- 6660. Histological Technique. (3). (G404-B)**
A study of the methods of preparing plant tissues for microscopic study; theories of staining and preparation of permanent mounts. Credit not permitted for both 6260 and 6660. **PREREQUISITE:** Biology 1200 or consent of the instructor. *One lecture, four laboratory hours per week.*
- 6720. Comparative Neurology. (4). (G460)**
A detailed study of the nervous system of selected animals with emphasis on the vertebrates. *Two hours lecture; four hours laboratory.* **PREREQUISITE:** Consent of the instructor.
- 6840. Invertebrate Zoology. (4). (G430)**
An advanced course dealing with the invertebrate animals, exclusive of the insects. Special attention is given to phylogeny, organology, and taxonomy. *Two hours lecture; four hours laboratory.* **PREREQUISITE:** Biology 1600 or its equivalent.
- 7000. Seminar in Biological Literature. (2). (510)**
Sources of literature in the field of biology and experience in the utilization of such sources in biological research. Class reports and term papers required. Required of all students as a prerequisite for writing a thesis.
- 7030. Cytology. (4). (550)**
Detailed studies of the functions and composition of individual cellular components, nuclear-cytoplasmic relationships, chromosomal variations and their genetic expression in plants. **PREREQUISITES:** Biology 1200 and 1600 or equivalent. *Three hours lecture, two laboratory hours per week.*
- 7091. Special Problems. (4). (591)**
Qualified students may be given special problems which they will investigate. The investigations will be pursued under the supervision of a member of the graduate staff and reported in the form of a written paper.
- 7092. Research. (2-4). (590)**
The student through consultation, reading, and laboratory work will investigate selected topics in some phase of biology. A formal paper giving a review of the literature and the results of the investigation will be required.
- 7100. Modern Biological Methods. (2). (530)**
A consideration of recent developments in biological techniques which may be applied in the study of living organisms. *Two one-hour lectures.*
- 7200. Seminar in Botany. (1). (513)**
A consideration of selected topics in the plant sciences in conference with a member of the staff. **PREREQUISITE:** Consent of the instructor. *Two one-hour conferences per week, hours may be by arrangement if not scheduled.*

- 7250. Advanced Plant Ecology. (4). (552)**
Considerations of plant distribution on a worldwide and a local basis with emphasis on the factors influencing plant distribution and growth. **PREREQUISITES:** Biology 3050 or equivalent. *Two hours lecture, four laboratory hours per week.*
- 7330. Intermediary Plant Metabolism. (3).**
A detailed study of the metabolism of carbohydrates, fats and nitrogen compounds in higher plants. **PREREQUISITE:** Permission of instructor.
- 7500. Virology. (4).**
Introduction to the viruses. Principles of methodology concerning origin, development, classification, and propagation. **PREREQUISITE:** General bacteriology and organic chemistry. *Three hours lecture; two hours laboratory per week.*
- 7530. Bacterial Physiology. (4). (G415)**
A survey of bacterial physiology including growth, nutrition, biosynthesis, and adaptation. *Three hours lecture; two hours laboratory.* **PREREQUISITE:** Bacteriology 3500, or its equivalent, and at least one year of Chemistry.
- 7600. Seminar in Zoology. (1). (514)**
A consideration of selected topics in the animal sciences, in conference with a member of the staff. **PREREQUISITE:** Consent of the instructor. *Two one-hour conferences per week, hours may be by arrangement if not scheduled.*
- 7840. Protozoology. (4). (560)**
A survey of the free living and parasitic protozoa. Consideration is given to structure, taxonomy, habitat, and life history. *Lecture two hours; laboratory four hours*
PREREQUISITE: five hours of zoology or its equivalent.
- 7920. Advanced Insect Morphology. (3).**
Comparative studies of selected insect groups. **PREREQUISITE:** Biology 3920 or the equivalent. *One lecture, four laboratory hours per week.*
- 7930. Advanced Insect Physiology. (3).**
A detailed study of the physiology of various organ systems of insects. **PREREQUISITE:** Biology 3930 or the equivalent. *One lecture, four laboratory hours per week.*
- 7940. Advanced Systematic Entomology. (3). (512)**
An advanced course in insect taxonomy. The principles of insect nomenclature with specific emphasis given to procedures. Intensive study is made in particular groups. **PREREQUISITE:** Biology 3940 or its equivalent.
- 7960. Applied Entomology. (4).**
Identification, ecology, and distribution of insect pests in this area. Principles and methods of control will be included.
- 7996. Thesis. (6). (596)**
All students majoring in Biology must write a thesis based on research done under the supervision of his major professor.

Business Education and Office Management

MR. JENNINGS, *Chairman*

- 6400. Punched-Card Methods. (3).**
Introductory course in the operation and use of punched-card equipment. Key punching, sorting, tabulation and preparation of reports, card designing and application to problems in the fields of economics, marketing, accounting, personnel, education, and other areas of research.

- 6410. Office Management I. (3). (G442)**
To acquaint the student with modern methods used in office organization and management. Topics: Role of Office Management, Scientific Office Management; Office Reports; Office Correspondence; Calculation and Checking; Filing; Records Retention; Duplicating; Handling the Mail; Planning Procedures; Planning for Equipment; Office Machines; Automation; Planning for Office Space; Physical Working Conditions and Office Layout. Fall Semester.
- 6540. Executive Communication. (3). (G452)**
Methods and techniques of communication are critically examined through the writing of case problems in correspondence with emphasis placed upon principles and correct writing; and in reports with importance placed upon the collection, analysis, organization, and presentation of authentic data. Open to graduating seniors and to graduate students, the course is primarily designed for the student who has had no basic study in either business correspondence or business report writing on the undergraduate level.
- 7420. Office Management II. (3). (542)**
Problems in actuating office employees and controlling the work of the office. Topics: Motivating Office Personnel; Job Evaluation; Recruiting and Training Office Employees; Office Supervision; Standards and Standardization; Quantity and Quality Control; Improving Procedures; Simplification; Office Forms; Measuring and Timing Office Work; Office Manuals; Office Costs and Budgets.
- 7610. Principles and Foundations of Vocational Business Education. (3). (581)**
The history, philosophy, principles and objectives of business education; curriculum problems; contribution of business education to general education; research problems and current business education literature.
- 7630. Improvement of Instruction in Secretarial Business Subjects. (3).**
A critical evaluation of content, visual aids, methods and testing in typewriting, shorthand and secretarial and office practice courses.
- 7640. Improvement of Instruction in Bookkeeping and General Business Subjects. (3).**
A critical evaluation of content, visual aids, methods, and testing in bookkeeping and general business subjects.
- 7650. Teaching Office Practice, Office Machines, and Punched-Card Methods in High School. (3).**
A study of content, methods and standards for courses in Office Practice in High Schools with special emphasis on the impact of automated Data Processing in the office.
- 7670. Seminar in Business Education. (3). (592)**
The purpose in this course is twofold: (a) to learn the methods and techniques of evaluating significant research studies and other current business education and related literature, and (b) to evaluate the progress that has been achieved in the conclusions of such literature to guide practical school use.
- 7680. Research and Thesis Preparation. (3).**
This course is planned to offer the student practical experience in analyzing and solving typical problems in various fields of business. Emphasis is placed on research techniques, report procedures, and applied presentation. The material is selected and designed to give needed supplementary guidance during thesis writing and/or problem solving in important areas other than content. An individual formal research problem is mandatory when the course is not taken to complete the sequence of one in which definite research and presentation are required.

- 7910. Problems in Business Education. (1-6). (591)**
Directed independent research projects in an area selected by the student with the approval of the staff member supervising. Prerequisite: Approval of supervising teacher and departmental chairman.
- 7995. Thesis. (3).**
Application for writing a thesis must be filled out on an approved form after consultation with the major professor and filed with the Dean of the Graduate School.
- 7996. Thesis. (6).**
(Same as above)

Chemistry

MR. FOX, *Chairman*, MR. ALLBRITTEN, MR. CALLOWAY, MR. CLAYPOOL,
MR. HOLMES, MR. KARRAKER, MR. MARSHALL, MR. ROBINSON,
MR. SCHIRMER, MR. SPELL, MR. WATSON

- 6011. Biochemistry. (4). (G401)**
This course covers the fundamental physical and chemical mechanisms involved in the vital processes of living organisms. PREREQUISITES: Chemistry 3211, 3212. *Two hours lecture and four hours laboratory per week.*
- 6012. Biochemistry. (4). (G402)**
This course covers the fundamental physical and chemical mechanisms involved in the vital processes of living organisms. PREREQUISITES: Chemistry 3211, 3212, 6011. *Two hours lecture and four hours laboratory per week.*
- 6200. Advanced Analytical Chemistry. (3). (G420)**
An advanced treatment of the theory and calculations of gravimetric and titrimetric analysis. PREREQUISITES: Chemistry 3412, or permission of the instructor. *Three lecture hours per week.*
- 6220. Instrumental Analysis. (4). (G422)**
Applications of recent developments in the field of instrumental analysis. The theory and use of colorimetric, spectrophotometric and electrometric methods of chemical analysis. Experience will be gained in the use of the Beckman Du spectrophotometer and other related colorimetric and spectrometric instruments. PREREQUISITE: Chemistry 4210. *Two hours lecture and four hours laboratory per week.*
- 6310. Organic Qualitative Analysis. (3). (G431)**
Characterization of known and identification of unknown, pure organic compounds by solubility tests, class reactions, specific test reagents, and the preparation of derivatives. *One hour lecture and six hours laboratory per week.* PREREQUISITES: Chemistry 2200, 3211 and 3212.
- 6900. Chemical Literature. (1).**
Use of the chemical literature and the writing of technical reports. PREREQUISITE: junior standing in chemistry. *One lecture hour per week.*
- 7011. Principles of Chemistry. (3). (501-I)**
This course, open only to high school science teachers, covers the fundamental principles of chemistry usually encountered in a general chemistry course, but presented in greater depth. Topics included are: atomic structure, bonding, periodicity, acid-base theory, chemical equilibrium, ionic equilibria and qualitative analysis, oxidation potentials, electro-chemistry and nuclear chemistry. The quantitative aspects of most of these topics are emphasized. This course cannot be applied toward a major or minor in chemistry or physics. PREREQUISITE: One year of college chemistry or the permission of the instructor. *Three hours lecture and three hours laboratory per week.*

7012. Principles of Chemistry. (3).

This course, open only to high school science teachers, is a continuation of Chemistry 7011. It includes a review of atomic structure and bonding; an introduction to thermodynamics and chemical kinetics; ionic equilibria in solution; electro-chemistry and oxidation-reduction; and an application of fundamental principles to the systematic study of the chemistries of the elements. Periodicity of structure and its relationship to the properties of the elements will be emphasized. **PREREQUISITE:** Chemistry 7011 or its equivalent.

7020. Principles of Organic Chemistry. (3).**(502-I)**

This course is open only to high school science teachers. It is the systematic presentation of the fundamental principles of organic chemistry with interpretation of structure and properties in accord with modern atomic and molecular theory. Emphasis is placed upon the sources and uses of organic compounds in our daily lives. Special topics will be developed that will familiarize the high school teacher with the recent advances in the field and areas suitable for special projects for high school students. Laboratory experiments and demonstrations will be developed and performed which may be adapted for use in high school courses. This course cannot be applied toward a major or minor in chemistry or physics.

PREREQUISITE: Two years of college chemistry or Chemistry 7010. *Three hours lecture and three hours laboratory per week.*

7030. Analytical Chemistry. (3).**(503-I)**

PREREQUISITE: Two years of college chemistry or Chemistry 5011. This course stresses recent analytical methods. It covers the fundamental principles of analytical chemistry including some gravimetric and titrimetric methods but with major emphasis on modern instrumental techniques. These include: ultraviolet, visible and infrared spectrophotometry, potentiometric, conductometric, voltametric and electrolytic methods; and both liquid and gas phase chromatography. **PREREQUISITE:** Chemistry 7010. *Three lecture hours per week.*

7051. Chemistry-Biology. (3).

This course, open only to high school science teachers, is an integrated study of chemistry and its relationship to the study of the biological sciences. Lectures will present the fundamental principles of chemistry and their biological implications and applications. Topics which will be discussed in detail include: atomic and molecular structure and bonding, ionic equilibria in solution, colligative properties of solutions, organic chemistry, the chemistry of the cell contents, proteins and enzymes, and the function of DNA, RNA and protein synthesis; control of cell metabolism. **PREREQUISITE:** 12-16 hrs. of biology.

7052. Chemistry-Biology. (3).

Continuation of Chemistry 7051.

7111. Advanced Inorganic Chemistry. (3).**(511)**

A survey of theoretical and applied inorganic chemistry. Stress is placed on nuclear and extranuclear structure, and the relationship of bonding to the properties of elements and compounds. *Three hours lecture per week.*

7112. Advanced Inorganic Chemistry. (3).**(512)**

A continuation of Chemistry 7111. *Three hours lecture per week.*

7113. Inorganic Preparations. (3).

Preparation of typical inorganic compounds illustrating special techniques. Prerequisite of corequisite: Chemistry 7111. *One hour lecture and six hours laboratory per week.*

7211. Principles of Analytical Chemistry. (3).**(521)**

An advanced study of the theory and practice of quantitative analysis. **PREREQUISITE:** Chemistry 3411. *Three hours lecture per week.*

- 7212. Advanced Analytical Chemistry. (3).**
A continuation of 7211. Study of physical chemical theory in chemical analysis. *Three hours lecture per week.*
- 7311. Advanced Organic Chemistry. (3). (7310)**
Modern theories of molecular structure as applied to organic systems and the relationship of these concepts to physical and chemical properties are treated. Special attention is given to the nature of covalent bonds, substituent effects, resonance theories and applications of absorption spectroscopy. **PREREQUISITE:** Chemistry 3312, corequisite: Chemistry 3411. *Three hours lecture per week.*
- 7312. Advanced Organic Chemistry. (3).**
An extensive treatment of the structure and mechanism of reactions of aliphatic, carbocyclic, and heterocyclic materials. Applications of methods of synthesis as applied to practical problems of preparation of organic compounds are included. **PREREQUISITE:** Chemistry 7311. *Three hours lecture per week.*
- 7330. Organic Preparations. (3). (533)**
The preparation and properties of organic compounds. Introduction to research methods. **PREREQUISITES:** Chemistry 2200, 3211, 3212. *One hour lectures and four hours laboratory per week.*
- 7360. Chemistry of Natural Products. (3). (536)**
A study of the structures, reactions and methods of synthesis of natural occurring organic compounds. Particular emphasis will be placed on alkaloids, steroids and terpenes. **PREREQUISITE:** Chemistry 3212. *Three lecture hours per week.*
- 7411. Advanced Physical Chemistry. (3). (541)**
Thermodynamics in relation to chemical equilibria and reactivity, including such topics as isothermal and adiabatic expansions, cyclic processes, heat content, specific heats, entropy, enthalpy, free energy, and vapor pressures. **PREREQUISITES:** Chemistry 3411 and Mathematics 2322.
- 7412. Advanced Physical Chemistry. (3).**
Special topics of general interest in advanced physical chemistry, but primarily emphasizing the statistical approach to thermodynamics based on Boltzmann statistics and the partition function, the statistical concept of thermodynamic functions, and molecular symmetry and group theory. **PREREQUISITE:** Chemistry 7411. *Three hours lecture per week.*
- 7511. Advanced Biochemistry. (4).**
The chemistry of substances found in living systems. **PREREQUISITE:** Chemistry 3312. Prerequisite or corequisite: Chemistry 3411 or permission of instructor. *Three hours lecture and three hours laboratory per week.*
- 7512. Advanced Biochemistry. (4).**
The chemistry of metabolic processes and energy transformations. **PREREQUISITE:** Chemistry 7511. *Three hours lecture and three hours laboratory per week.*
- 7910. Special Problems in Chemistry. (3).**
Individual investigation and report under the guidance of the student's major adviser.
- 7913. Chemistry Seminar. (1).**
General meetings for presentation and discussion of recent topics of interest. Graduate students and faculty participate. Required of all resident graduate students.
- 7923. Chemistry Seminar. (1).**
General meetings for presentation and discussion of recent topics of interest. Graduate students and faculty participate. Required of all resident graduate students.

7933. Chemistry Seminar. (1).

General meetings for presentation and discussion of recent topics of interest. Graduate students and faculty participate. Required of all resident graduate students.

7943. Chemistry Seminar. (1).

General meetings for presentation and discussion of recent topics of interest. Graduate students and faculty participate. Required of all resident graduate students.

7996. Thesis. (G).**(596)**

The original investigation of an assigned problem in the area of graduate study to be carried out under the supervision of a qualified member of the staff. This investigation will furnish the material for a thesis. Scientific articles, progress reports, and special problems of interest to chemists are reviewed and discussed by the student in seminars each semester, participation in which is required of all graduate chemistry majors each semester. A maximum of six semester hours credit is allowed toward a master's degree.

Physical Science

6050. Glass Manipulation.**(Chem. G405)**

A laboratory course in the fundamentals of glass manipulation and the construction and repair of simple laboratory apparatus. *Six laboratory hours per week.*

6070. General Science for High School Teachers. (3).**(G405-I)**

A study of the fundamental principles of astronomy, chemistry, geology and physics as they relate to the understanding and teaching of general science. Classroom experiments and demonstrations will be included.

6080. Space Science. (3).

This course, open only to high school science teachers, is a basic introductory course in astronautics. It includes a history of astronautics, a description of the solar system, and some astronautical objectives in our solar system. It treats the methods of space physics, interplanetary environment, astrogeology and astrobiology. Also included in the field of space engineering are such topics as vehicle development, aerodynamics, guidance and control systems, propulsion systems and structural design. A brief discussion of basic and human factors in space medicine are also presented. **PREREQUISITE:** One year of general physics.

7040. Astronomy. (3).**(501-I)**

A course in astronomy open to junior and senior high school teachers of science.

Curriculum and Instruction

MR. RUMBLE, *Chairman*, MR. BROWNLEE, MR. CRABTREE, MR. DAVIS,
MR. DOWD, MR. FORTUNE, MR. KELLY, MR. KRAUSE, MR. NELMS,
MR. NOTHERN, MISS SAWYER, MR. SMITH, MRS. TAYLOR,
MR. THOMPSON, MR. UNDERWOOD, MISS WITT

6011. History of Education. (3).**(G-451)**

This course traces through European history some of the more important educational problems of modern times as they have been affected by the social and political facts of history, by the contributions of some of the leading educational theorists, and by institutional practices.

6012. History of Education in the United States. (3).**(G-452)**

This course aims to trace, describe, and evaluate, in the light of accepted facts, the development and growth of our educational practice, institutions, and theories from the beginning of colonial life to the present time.

- 6021. Philosophy of Education. (3). (G-453)**
The purpose of this course is to furnish a guide to the philosophical treatment of, and to develop in the student some facility in critical and systematic thinking about, educational problems.
- 6031. Educational Sociology. (3). (G-456)**
Group behavior in the educational process; sociological factors involved in the interaction of pupils, teachers, administrators, and community.
- 6112. The Psychology of Adolescence. (3). (G-472)**
A study of the characteristics of the adolescent stage of development that should be taken into account in the planning and teaching of secondary school courses of study, in the supervision of extra-class activities in the secondary school, and in guiding and counseling with adolescents.
- 6131. Mental Hygiene and the School. (3). (G-476)**
Guidance for the teacher in working on her own personality development and a study of the mental hygiene of the child as affected by his total environment, past and present.
- 6151. Education of Exceptional Children. (3). (G-480)**
A survey course which deals with the general problems involved in education of exceptional children.
- 6162. Education of the Brain-Injured and Cerebral Palsied Child. (3). (G-482)**
The content of this course consists of a study of (1) the neurological mechanisms, (2) the types of aphasia and their possible educational implications and adjustments, (3) the types of cerebral palsy and their educational implications and remedies by use of special methods and materials, and (4) the study of various other physiological impairments (such as encephalitis) frequently encountered by teachers of special education, with an investigation as to the most satisfactory educational approach to the rectification of these conditions.
- 6171. Education of Hospitalized and Homebound Children. (3). (G-483)**
This is an orientation to the general and specific problems of the hospitalized and homebound child.
- 6172. Educational and Medical Aspects of Crippling and Special Health Conditions. (3). (G-484)**
This course consists of a detailed study of the various types of physically disabling conditions (poliomyelitis, cleft palate, arthritis, measles, and other commonly injurious conditions) which cause either temporary or permanent decreases in educational proficiency. Special methods of instruction for these health conditions would be studied along with suitable adaptations of materials for such afflicted children within the framework of the public school organization.
- 6173. Introduction to Social Case Work. (3). (G-485)**
This is an introductory course designed to acquaint the student with the concepts and principles underlying social case work.
- 6174. Supervised Clinical Training in Educational Therapy. (6). (G-478)**
Practical application in the rehabilitation of patients with neuropsychiatric, orthopedic, neurological, cardiac, pulmonary and other general medical and surgical disabilities employing educational type activities, as the modality for their treatment, including such procedures as Braille, Speech Therapy, General Educational Development, Literacy Training, and other vocational subjects.

- 6181. Methods and Materials for Teaching Visually-Handicapped Children. (3). (G-487)**

A course primarily designed for teachers of the partially-seeing and blind within the framework of public schools, consisting of study in the growth and development of visual imbalance, and the environment and educational implications of visual problems; the historical background of special programs in the education of the visually-handicapped, and the adaptations of educational methods and materials to the teaching of such handicapped children.

- 6182. Introduction to the Teaching of Braille. (3). (G-488)**

A course designed to give the basic fundamentals in Braille instruction, including the introduction of equipment for Braille writing, development of skill in the use of such equipment, the history and development of Braille and other instructional procedures for the blind, and mastery of the Nemeth Code of Mathematics, three-dimensional bulletin boards and equipment, and practicum in the use of these materials.

- 6242. The Teaching of Developmental Reading. (3). (G-446)**
(Formerly Improving the Teaching of Reading)

Survey of reading methods and research for the person who has had experience in the classroom.

- 6245. The Teaching of Children's Literature in the Elementary School. (3). (G-445)**

This is a course designed to improve the methods of teaching children's literature in the elementary school. Units on story telling dramatization, choral speech work, and the correlation of literature with the content subjects will be carried out.

- 6252. The Teaching of Modern Mathematics in the Elementary School, (Grades 1-8). (3). (G-443)**

This is an advanced course acquainting prospective and experienced teachers with the mathematical process required of the elementary child and giving an insight into reasons why certain methods are used.

- 6262. The Teaching of Natural Science in the Elementary School. (3). (G-442)**

This is an advanced course in the study of the natural environment as a child would view it. A survey of the suitable equipment and materials for the elementary classroom and limited experience at carrying on experiments at the child's level.

- 6272. The Teaching of Social Studies in the Elementary School. (3). (G-444)**

An analysis will be made of social problems, needs, and interests which are basic to the curriculum of the elementary school child. The role of the social studies and its relationship to the total school program will be emphasized.

- 6301. Audio-Visual Aids to Teaching. (3). (G-466)**

Audio-visual materials will be examined from the point of view of their effectiveness and possible utilization in the school program. Opportunity will be provided to develop skills in the use of materials and equipment. The technical and administrative problems of integrating audio-visuals into the school curriculum will be studied.

- 6344. The Teaching of Reading in the Secondary Schools. (3).**

A course designed for teachers at the secondary level, either in the content areas or specialists, exploring methods, materials, and organizational patterns by which reading skills can be developed and improved in the secondary schools. **PREREQUISITES:** Educ 4242 or 6242, or Educ 7243, or teaching experience at the secondary level.

- 6421. Curriculum Problems and Trends in the Elementary School. (3). (G-462)**
This course deals with general educational objectives and means of achieving them; the role of the various school subjects and their relationships, and with the organization and use of units of work in the core curriculum.
- 6441. Curriculum Problems and Trends in the Secondary School. (3). (G-461)**
This course is designed to afford some help in the clarification of secondary school educational purposes and in determination of appropriate learning activities. It deals with the functional teaching objectives, ways of attaining these objectives, methods of establishing relationships among the school subjects, developing the core curriculum, and the organization and use of units of work.
- 6611. Procedures, Administration, and Organization of Guidance Services in Schools. (3). (G-471)**
Historical background and growth of the guidance movement; sociological, psychological, and educational foundations; functions, scope, organization and administration of guidance services; duties and responsibilities of administrators, teachers, and specialists in guidance programs.
- 6701. Workshop in the Improvement of Instruction. (3). (G-431)**
This course is designed primarily to assist in-service and prospective teachers of grades one through twelve to improve the instruction-learning program. Attention is given to common elements of basic methodology such as purposes of education, classroom learning, motivation of learning, the utilization of appropriate materials and resources, evaluation of teaching and learning, etc. Attention is also given to ways and means of applying these elements of methodology in the several instructional areas of the elementary school and in the particular subject areas of the secondary school.
- 6721. Workshop for Teachers in the Elementary School. (6). (G-429)**
A course designed to meet the needs of in-service teachers by offering an opportunity to work cooperatively on problems which are real to teaching situations and which meet the needs of the individual.
PREREQUISITE: teaching experience and consent of the director of the workshop.
- 6741. Materials and Methods of Teaching High School —. (3). (G-492)**
A workshop in teaching methods in a specified endorsement area.
- 6751. Workshop in the Reading Program. (3-6). (G-448)**
Through the media of group study, discussion, demonstrations, directed observation, and laboratory work, participants will have opportunity to formulate plans for their reading program as to content, methods and techniques, materials, and evaluative criteria.
- 6761. Aerospace Education in Schools. (3). (G-435)**
The purpose of this course is to provide teachers with aerospace knowledge and experiences and ways of utilizing this knowledge and experience in the classroom.
- 6771. Workshop in the Administration of Guidance Services. (3). (G-432)**
This course is designed primarily to assist in-service and prospective teachers and administrators in providing more effective guidance services in grades one through twelve. Services to be considered may be grouped as follows: inventory, information, counseling, placement, and follow-up. Particular attention will be given to planning, organizing, and evaluating these services.

- 6781. Workshop for Teaching Perceptually Handicapped Children. (3). (G-439)**
A workshop for teacher-training in the area of perceptually handicapped children (brain-injured, non-retarded), who demonstrate a learning and/or behavioral disorder, due to a minor or moderate neurological impairment.
- 6791. Materials and Methods of Teaching High School —. (3). (G-491)**
An advanced course in a specified endorsement area, partly taught by means of televised instruction.
- 6811. Supervised Practicum in the Kindergarten. (3-6). (G-423)**
(formerly Directed Student Teaching in the Kindergarten)
Observation of the growth and development of pupils and of methods of teaching; participation in school activities, culminating in assuming responsibility for teaching entire groups.
- 6821. Supervised Practicum in the Elementary School. (3-9). (G-425)**
(formerly Directed Student Teaching in the Elementary School)
Observation of the growth and development of pupils and of methods of teaching; participation in school activities, culminating in assuming responsibility for teaching entire groups.
- 6822. Supervised Practicum in the Elementary School. (3-6). (G-426)**
(formerly Directed Student Teaching in the Elementary School)
For the student who has completed six semester hours or less of student teaching in the elementary school and desires some additional experience.
- 6841. Supervised Practicum in the Secondary School. (3-9). (G-415)**
(formerly Directed Student Teaching in the Secondary School)
Observation of the growth and development of pupils and of methods of teaching; participation in school activities, culminating in assuming responsibility for teaching entire groups.
- 6842. Supervised Practicum in the Secondary School. (3-6). (G-416)**
(formerly Directed Student Teaching in the Secondary School)
For the student who has completed six semester hours or less of student teaching on the secondary level and desires some additional experience.
- 6881. Supervised Practicum with the Educable Mentally Retarded. (3). (G-427)**
(formerly Student Teaching with the Educable Mentally Retarded)
Orientation, observation, teaching with mentally retarded pupils. PREREQUISITE: Education 4821 or 4822.
- 6882. Supervised Practicum with Pupils Who have Crippling and Special Health Conditions. (3). (G-428)**
(formerly Student Teaching with Pupils who have Crippling and Special Health Conditions.)
Orientation, observation, teaching with pupils who have crippling and special health conditions. PREREQUISITE: Education 4821 or 4822.
- 7001. Foundations of Education. (3). (501)**
This course includes a study of the historical, philosophical, and social forces influencing modern American education.
- 7011. Educational Thought. (3). (501)**
This is a study of the evolution of educational theories and philosophies with particular reference to their impact upon educational developments in the United States.
- 7031. Social Foundations of Education. (3). (504)**
This course is designed to study education as a cultural universal. It emphasizes the mutual influence of social institutions and education as well as the factors involved in the socialization of the student personality.

- 7041. Comparative Education. (3). (506)**
This course is designed to offer a scientific study of education in various cultures by exploring the relationships that exist between a given educational system and the philosophy, history, geography, and technology of the people. This course is planned to give background and meaning to the content and method in the area of the social studies with special emphasis on international understanding.
- 7111. Advanced Child Study. (3).**
The interrelatedness of all phases of growth as it affects the elementary school child in the home, school, and society.
- 7121. Educational Psychology. (3). (521)**
This is an advanced course in the psychology of teaching and learning designed especially for experienced teachers and administrators who desire to pursue graduate study in the field of education.
- 7151. Administering and Supervising Public School Special Education Programs. (3).**
This course deals with the major areas of school administration and supervision as they relate to special education. It is designed to prepare special educators to work with placement, in-service training, and supervision of professional personnel, organization of programs, financing and budgeting, physical plant facilities and working with related agencies.
- 7161. Advanced Theory in Curriculum Development for the Mentally Retarded. (3).**
A course to teach the theoretical and philosophical foundations for the experience-centered curriculum for the mentally retarded. Research will be studied and evaluated. Issues will be debated and proposals for curricular approaches will be presented and defended.
- 7162. Vocational Rehabilitation of Mentally Retarded Youth. (3).**
This course is constructed to emphasize the educator's function in vocational rehabilitation of mentally retarded youth. It will cover the planning of vocational experiences in the school and out of school settings, the problems of a school vocational counselor placing and supervising his pupils in job training situations, the working with other disciplines and agencies in the community in order to bring about a follow up when the pupil needs help after leaving school.
- 7201. Modern Methods in Elementary Education. (3). (557)**
A consideration of the overall task or function of elementary education and what this means to elementary school teaching. How the elementary school can perform its role most effectively.
- 7243. Modern Reading Instruction. (3).**
A survey of developmental reading, analyzing the total process in depth: the psychological foundations, the application of learning theory to reading instruction, new approaches, media and the critical evaluation of materials. **PREREQUISITE:** Teaching experience.
- 7244. The Diagnosis of Reading Problems. (3).**
(formerly 7246. Diagnostic and Remedial Reading in Elementary and Secondary Schools)
An introduction into the identification of problems of pupils who have reading difficulties, including the psychological bases for reading retardation, and the diagnostic procedures used to determine the type and extent of reading disability. **PREREQUISITE:** Teaching experience and Education 6242 or 7243.

7245. The Treatment of Reading Problems. (3).

Designed to provide knowledge of materials, programs and techniques to be used in classroom treatment to aid pupils in overcoming reading disability; including experience in teaching small groups who need such help. **PREREQUISITE:** Education 7244.

7253. The Teaching of Intuitive Geometry in the Elementary School (Grades 1-8) (3).

Teaching of intuitive geometry as it occurs in the elementary grades. Because of the increased recognition geometry is receiving, this course provides the elementary teacher with a wide variety of activities useful with elementary children.

7301. Modern Methods in Secondary Education. (3). (558)

A consideration of the overall task or function of secondary education and what this means to secondary school teaching. How the secondary school can perform its role most effectively.

7401. Fundamentals of Curriculum Development. (3). (561)

A study of the fundamental aspects of curriculum development and the basic issues underlying curriculum planning. Four significant aspects are: educational directions; ordering potential experiences; patterns of curriculum organization; and the determination of principles and procedures by which changes in the curriculum can be made, evaluated and sustained.

7431. The Modern Junior High School. (3). (565)

Origin and functions of the junior-high-school; prevailing nationwide practices in its educational program; and a description of suggested improved programs and procedures not yet common to the typical school.

7442. Curriculum and Supervision in Reading. (3).

A study of selected curricula and the planning of a sound school program in reading; understanding the functions and duties of the reading supervisor or consultant and the effective ways of implementation. **PREREQUISITES:** Education 6242 (or 7243), 7244, and 7245.

7461. The Pupil Activity Program. (3). (566)

A study of current philosophy and practice in regard to responsibilities of teachers, supervisors, and administrators for those phases of educational practice which are essential for the educational program, but are not considered as part of general classroom procedure.

7511. Measurement and Evaluation. (3). (553)

(formerly Educational Tests and Measurements)

Consideration of good evaluation practices, the preparation and use of informal objectives and essay-type tests, a study of typical standard tests, and an introduction to elementary statistical procedures. This course is not required of students who have completed a similar course at the undergraduate level.

7521. Introduction to Educational Research. (3). (536)

(formerly Educational Statistics and Research Methodology)

This course includes the kinds of research: documentary, experimental, case study, descriptive. The student is expected to select a research topic and prepare an appropriate design for it. Functional statistics are included.

7531. Seminar in Curriculum Improvement. (3). (562)

(formerly Research in Curriculum and Instructional Problems)

An evaluation of investigations and experimental evidence underlying the aims and instructional practices of the various subject-matter fields of the public schools.

7621. Problems of the Elementary School Child. (3).

An analysis of social, emotional, and educational problems in the development of the elementary school child, with emphasis on guidance approaches for preventing these problems and helping children resolve their conflicts as they occur.

7631. The Group Process as Applied to Guidance. (3).**(529)**

This course is a study of the group process as applied to the role of teachers and counselors in Guidance. It includes homeroom and group guidance procedures, and the counselor's function in working effectively with students, administrators, and teachers in the school.

7651. Diagnostic Techniques in Guidance. (3).

(formerly Diagnostic Techniques)

Analysis and use of the diagnostic techniques basic to school guidance and counseling. How to select, use, and interpret devices for gathering data about students; how to assemble and interpret data from cumulative records and case histories.

7661. Educational and Occupational Information. (3)**(528)**

This course is concerned with needs, trends, training facilities, and vocational opportunities. Emphasis will be placed on gathering, interpreting, and using all types of educational, social, occupational, and community information in the guidance program.

7681. Techniques of Counseling. (3).**(526)**

This course includes a consideration of different schools of thought in counseling; how the school counselor works. Effective procedures for interviewing and counseling students including implications for school social work.

7691. Supervised Practicum in Guidance and Counseling in the Secondary School. (3).**(G-479)**

(formerly Supervised Practicum School Guidance and Counseling)

Supervised application of the principles and methods of guidance derived from professional preparation for school counselors: standardized tests, records and personal data, educational and occupational information, personal and group counseling and interview techniques. Minimum: 45-135 clock hours. Prerequisite: Consent of instructor.

7692. Supervised Practicum in Guidance and Counseling in the Elementary School. (3).**7801. Supervision of Student Teaching. (3).**

This course deals with principles and techniques of supervising student teaching. It is designed for supervising teachers, administrators, coordinators of student teaching programs, and college personnel who supervise student teachers.

7841. Reading Clinic I. (3).

The first semester is devoted to a laboratory experience designed to acquaint the student with clinical procedures used in evaluating reading disability. It includes observation, practice under supervision in the administration of reading clinical instruments and the interpretation of the results. **PREREQUISITES:** Education 7244 and 7245.

7842. Reading Clinic II. (3).

The second semester is a laboratory experience designed to provide the theoretical and practical experience gained by using special techniques and materials for teaching reading to the severely disabled reader.

7843. Supervised Practicum in Reading Program. (3).

A supervised application of the principles and methods of instruction and reading curriculum planning as they apply to practical situations which a reading supervisor or special reading teacher might encounter. **PREREQUISITE:** Education 7442.

- 7991. Special Problems in Instruction. (1-3). (591A)**
Individual investigation and report in the area of classroom instruction under the direction of a faculty member.
- 7992. Special Problems in Curriculum. (1-3). (591B)**
Individual investigation and report in the area of curriculum development under the direction of a faculty member.
- 7993. Special Problems in Guidance. (1-3). (591C)**
Individual investigation and report in the area of guidance under the direction of a faculty member.
- 7994. Special Problems in Special Education. (1-3). (591C)**
- 7995. Thesis. (3). (593)**
Only students with superior scholarship are permitted to register in this course. The student must present in writing an outline describing the proposed thesis. This outline, when approved by the faculty members under whose direction the thesis is to be written, must be submitted to the Chairman of the Department of Curriculum and Instruction for his approval. This course will involve writing the thesis and will emphasize the adequate setup of the problem, the collection of the data, their use, and conclusions to be reached. Application for writing a thesis must be filled out on an approved form after consultation with the major professor and filed with the Dean of the Graduate School at the time of registration.
- 7996. Thesis. (6). (596)**
(Same as above.)

Economics and Finance

MR. VISER, *Chairman*, MR. CARRIER, MR. HRUBY, MR. MARKLE,
MR. NEWKIRK, MR. WEST

- 6120. Business Cycles and Forecasting. (3). (G414)**
Cyclical fluctuation examined from the standpoint of definition, theoretical explanation, measurement and quantitative evaluation, secular change implications, and basic forecasting techniques. Both semesters. PREREQUISITE: Economics 3610 and Management 3710.
- 6130. Industrial Organization and Control. (3). (G491)**
A critical study of the major forms of industrial organization and the social and managerial implications of each. The several approaches to legal and legislative control: tax laws, commission regulation, anti-monopoly legislation. The impact of each on industrial operating policy. Both semesters. PREREQUISITE: Economics 2120.
- 6140. Business and Economic Research. (3).**
A study of basic research techniques and their application to business and economic problems. Attention is given to both primary-source and secondary-source study approaches. Spring semester. PREREQUISITE: Management 3710.
- 6310. Microeconomic Theory. (3). (G413)**
An intermediate examination of price theory and distribution theory. Stress is placed on the market mechanism as a device for resource allocation, with attention given to the uses of basic microeconomic concepts in the analysis of economic problems and in the formulation of economic policy. Both semesters. PREREQUISITE: Economics 2120.
- 6320. Macroeconomic Theory. (3). (G492)**
An intermediate examination of the elements of aggregate theory, with emphasis given to social income accounting and to functional relationships between important aggregate economic variables. Attention is given to forecasting and social policy implications. Both semesters. PREREQUISITE: Economics 3610.

- 6340. Comparative Economic Systems. (3). (G412)**
Analytical Study of economic problems and the theoretical framework under different economic systems such as capitalism, socialism, communism. Emphasis on the economic problems of U.S.S.R. Fall semester. PREREQUISITE: Basic Economics.
- 6350. International Economics. (3). (G493)**
Historical approach to the theory of international trade. Consideration is given to the techniques of control over investment and trade, foreign exchange, balance of payments, and world interdependence. Spring semester. PREREQUISITE: Money and Banking.
- 6360. Econometrics. (3).**
A study of the problems of conceptualizing and computing econometric models. Both analytical and forecasting models will be considered. PREREQUISITE: Management 3710 and one semester of college mathematics.
- 6410. Development of Economic Thought. (3). (G411)**
An analytical and critical study of the development of economic thought. Fall semester. PREREQUISITE: Basic Economics.
- 6610. Money and Banking II. (3). (G461)**
A more detailed consideration of banking and its problems since 1930. Emphasis is given to monetary and banking policy and its relationship to business and fiscal policy. Spring semester. PREREQUISITE: Money and Banking.
- 6710. Financial Markets. (3).**
A study of the important financial markets with analysis of the sources and demands for funds in each sector. PREREQUISITE: Money and Banking.
- 6720. Public Finance. (3). (G451)**
Theory and practice of government expenditure and revenue; theory, practice, shifting, and incidence of the various forms of taxation; elementary consideration of the integration of revenue and expenditure into fiscal policy. Fall semester. PREREQUISITE: Basic Economics.
- 7110. Managerial Economics. (3).**
A study of the economic rationale underlying key management decisions. Managerial problems are identified and examined in the light of relevant economic concepts, and action is determined on the basis of economic logic. PREREQUISITE: Economics 3110 or permission of the instructor.
- 7410. Seminar in Economic Thought. (3). (511)**
Individual studies in economic thought are pursued. The student is required to select one of the more recent economic thought systems—Marxism, Neo-Classicism, Institutionalism, Keynesianism, Neo-Keynesianism—for intensive critical analysis. Spring semester. PREREQUISITE: Economics 6410 and permission of the instructor.
- 7420. Seminar in Current Economic Problems. (3). (513)**
Special study of selected current problems in this area. For the most part, individual studies will be pursued with group analysis and discussion at regular class meetings. Fall semester. PREREQUISITE: Consent of the instructor.
- 7430. Seminar in Economic Analysis. (3).**
An examination of some of the more recently developed techniques of economic analysis—including input-output analysis, linear programming, flow-of-funds analysis, operations research, econometric analysis. PREREQUISITE: Economics 6310, 6320, and permission of the instructor.
- 7440. Seminar in Labor Economics. (3).**
Special study of selected problems in labor economics with emphasis on individual study and group analysis. PREREQUISITE: Economics 3210 and permission of the instructor.

- 7610. Monetary and Fiscal Policy. (3). (561)**
The planning and implementation of various monetary and fiscal measures. Emphasis is placed on the probable impact on important segments of the economy. Included is a survey of the tools, techniques and changes in economic thinking as to their use. Fall Semester. PREREQUISITE: Economics 6610.
- 7710. Seminar in Investment Planning. (3). (562)**
A study of the objectives of investment management with the emphasis on investments by individuals rather than by institutions. A study of risks as the principal elements involved in making investment decisions; the analysis of particular industries, companies and securities involved in the selection of portfolio securities. Spring semester. PREREQUISITE: Economics 6710.
- 7720. Seminar in Current Problems in Finance. (3). (563)**
Special study of selected current problems in this area. For the most part, individual studies will be pursued with group analysis and discussion at regular meetings. Spring semester. PREREQUISITE: Consent of the instructor.
- 7910. Problems in Finance. (1 to 6). (591)**
Directed independent research projects in an area selected by the student with the approval of the staff member supervising. PREREQUISITE: six hours of graduate work in the area selected.
- 7911. Problems in Economics. (1 to 6). (591)**
Directed independent research projects in an area selected by the student with the approval of the staff member supervising. PREREQUISITE: six hours of graduate work in the area selected.
- 7995. Thesis. (3). (593)**
Application for writing a thesis must be filled out on an approved form after consultation with the major professor and filed with the Dean of the Graduate School.
- 7996. Thesis. (6). (596)**
Application for writing a thesis must be filled out on an approved form after consultation with the major professor and filed with the Dean of the Graduate School.

Educational Administration and Supervision

MR. CRADER, *Chairman*, MR. COLMEY, MR. DANLEY, MR. HAYNES,
MR. JOHNSON, MR. RICHARDSON

- 6110. Elementary School Administration. (3). (G486)**
A study of the major aims of the elementary school; planning the daily program through the integration of related subjects; learning to keep and interpret various types of records and reports. Considering the importance of proper teacher-parent relationships. Special emphasis on the P. T. A. program in Tennessee.
- 6400. School and Community Relationships. (3). (G-411)**
The relationship of the school to the community movements and organizations concerned with health and safety, government and civic life, religion, occupations, extension services, children's organizations and clubs, adult education, cultural education, community cooperative movements, etc.; relationships of the community to such school activities as attendance, athletics, lunch, libraries, extracurricular program, home study, records and reports, guidance, etc.
- 7100. Public School Organization and Administration. (3). (581)**
The following will be studied: the administrator and his leadership; his relation to all agents and agencies of the school; types of school organization, administrative and instructional supervision; classification and promotion of pupils; curriculum activities and materials; public relations; office administration, plant operation, assemblies, extra-instructional activities; special classes, library, and health program.

- 7120. School Finance. (3). (582)**
(formerly School Finance and Business Management)
The theory and practice of financing public education in the United States, development of guiding principles of educational finance, trends and needs in state and federal participation in school support, and local operational finance; particular attention to the financing of the public schools of Tennessee.
- 7130. School Business Administration. (3).**
The role of business administration in public education; principles and practices of auditing, budget preparation and control, debt service, insurance, legal aspects, payroll administration, purchasing, supply management and transportation.
- 7140. School Plant. (3). (583)**
(formerly School Housing and Transportation)
A consideration of the school plant, grounds, and major equipment in relation to the educational needs of the community; factors in site selection, procedures in planning school buildings, principles of design and construction, architectural and contractual services and maintenance.
- 7150. High School Administration. (3). (584)**
This course is offered as a concise description of modern useful practices in organizing and administering secondary schools, types of high schools, selection and assignment of staff, program of studies, records, management of buildings and grounds, pupil personnel guidance, selection, retention and improvement of teachers, and interpreting the school to the public.
- 7160. Administration of School Personnel. (3). (585)**
This course is designed to deal with the various aspects of school personnel management. Qualification, selection, pay schedules, and general personnel policies dealing with retirement, sick leave, insurance and other such problems will be considered. Attention will be given to the efficient use of administrative, instructional and noninstructional personnel.
- 7170. Internship in School Administration. (3 or 6). (586)**
This course is designed to provide practical experience to students of school administration. The student will have opportunity to observe and participate as an administrative intern in selected school systems. The areas of observation and participation will include administration, supervision, school-community relationship, finance, and plant and transportation at secondary and/or elementary levels. Prospective enrollees should give thirty days notice of intention and secure approval of the chairman of the department.
- 7180. School Law. (3). (588)**
This course is designed to consider the Federal and State statutes and local regulations which are applicable to the field of education. Emphasis is placed on legal requirements and their implications for public school operation. Court decisions relating to public schools are considered. The course is for administrators and students of administrative procedures.
- 7200. City and County School Supervision. (3). (571)**
A course designed to consider the general supervisory functions and techniques in school systems. The purpose of the course is to help the administrator and supervisor evaluate present programs and practices and from the evaluations plan in-service-training experiences which lead to improved instruction.
- 7210. High School Supervision. (3). (572)**
This course is designed to investigate some of the modern theories, principles and practices of school supervision as they apply to the practical problems of supervision at the secondary school level. Qualifications, selection and performance of supervisors are considered, along with the functional demands on modern secondary schools.

- 7220. Elementary School Supervision. (3). (573)**
This course deals with significant supervisory problems at the elementary school level. Recent research findings will be used to focus on the problems as they are dealt with through democratic elementary school supervision.
- 7300. Techniques of Educational Research. (3). (537)**
A study of techniques used in the solution of educational problems with the objectives of (1) appreciation and critical evaluation of the work of others, and (2) the ability to use one or more techniques. Particular attention will be given to techniques of problem solving by group process.
- 7410. Human Relations in School Administration. (3). (589)**
The course will emphasize human relations in successful educational leadership positions. Human relations principles will be applied to the various responsibilities of school leaders, and research findings in this field will be interpreted for successful practices in school administration. Investigation of the practices and concepts of school leadership will be designed to help the student develop a personal philosophy which will be of practical benefit in his position.
- 7500. Contemporary Issues in Educational Leadership. (3). (587)**
Seminar on contemporary issues confronting leaders in American education currently before the profession and the public. The role of the administrator in resolving contemporary issues.
- 7510. Seminar in Educational Leadership. (1-6). (599)**
This course is designed primarily for persons in positions of educational leadership. It will deal with problems and issues deriving from movements and trends in our present day culture. Emphasis will be given to educational leadership arising therefrom.
- 7700. Special Problems in School and Community Relationships. (1 to 3). (591D)**
Individual investigations and reports of specific problems.
- 7710. Special Problems in School Supervision. (1 to 3). (591E)**
Individual investigations and reports of specific problems.
- 7720. Special Problems in School Plant and Transportation. (1 to 3). (591F)**
Individual investigations and reports of specific problems.
- 7730. Special Problems in School Finance and Business Management. (1 to 3). (591G)**
- 7750. Special Problems in School Law. (1 to 3). (591H)**
Individual investigations and reports of specific problems.
- 7760. Special Problems in Educational Research. (3).**
Individual investigations of public school surveys, with a critical study of current practices, trends, and objectives.
- 7995. Thesis. (3). (593)**
Only students with superior scholarship are permitted to register in this course. The student must present in writing an outline describing the proposed thesis. This outline, when approved by the faculty members under whose direction the thesis is to be written, must be submitted to the Chairman of the Department of Educational Administration and Supervision for his approval. This course will involve writing the thesis and will emphasize the adequate setup of the problem, the collection of the data, their use, and conclusions to be reached.

Application for writing a thesis must be filled out on an approved form after consultation with the major professor and filed with the Dean of the Graduate School at the time of registration.

7996. **Thesis. (6).** (596)
(Same as above.)

Engineering and Applied Science

MR. KELLOGG, *Dean*, MR. CARIANI, MR. KADABA, MR. SPIGOLON,
MR. RASHAD, MR. WU

7001. **Engineering Analysis I. (3).**
Review of mathematical methods for applications to civil, electrical, and mechanical engineering; introduction to analog and digital computers.
Three lecture hours per week.
7002. **Engineering Analysis II. (3).**
Analysis of unsteady-state systems; lumped systems for digital computation; distributed systems for analog computation. PREREQUISITE: 7001.
Three lecture hours per week.
7005. **Engineering Systems Analysis. (3).**
Analogies between various engineering systems; applications to analog and digital computers.
Three lecture hours per week.
7011. **Statistical Methods in Engineering. (3).**
Basic statistical theory, significance tests, sampling theory and correlation analysis applied to problems in engineering and science.
Three lecture hours per week.
7012. **Probabalistic Methods in Engineering. (3).**
Uses of Information Theory; Symbolic Logic, Bayes Theorem, Principle of Maximum Entropy, applied to problems in reliability, decision theory and engineering design with limited data. PREREQUISITE: 7011 or equivalent.
Three lecture hours per week.
7061. **Materials Science I. (4).**
Study of the structure and properties of engineering materials using solid-state physics and crystallography; elements, structure, alloys; mechanical, electrical, and thermal properties.
Three lecture, three laboratory hours per week.
7062. **Materials Science II. (4).**
A continuation of 7061.
Three lecture, three laboratory hours per week.
7101. **Soil Mechanics. (3).**
Physico-chemical basis of soil structure; identification and classification; permeability; compressibility; strength; applications.
Two lecture, three laboratory hours per week.
7102. **Applied Soil Mechanics. (3).**
Applications of theory to practical design of building foundations; retaining walls, hydraulic structures and machine foundations.
Two lecture, three laboratory hours per week.
7201. **Applied Molecular Electronics I. (3).**
Applications of materials science to conductors and semi-conductors.
Three lecture hours per week.

7202. Applied Molecular Electronics II. (3).

Continuation of 7201 with emphasis on modern solid state devices such as masers, lasers and micromodules.

Three lecture hours per week.

7211. Electromagnetic Field Theory. (3).

Advanced studies in electromagnetic fields, radiation and propagation of energy.

Three lecture hours per week.

7212. Wave Propagation in Plasma. (4).

Propagation of electromagnetic waves in homogeneous and inhomogeneous plasmas. Analysis of cold and hot plasma dispersion relations. Plasma oscillations, Landau damping and energy transfer relations.

Four lecture hours per week.

7213. Antennas. (3).

Physical principles of radiation, directive radiation, antenna currents, impedance, reciprocity and equivalence; general theory of linear antennas, linear antenna systems and special antennas.

Three lecture hours per week.

7221. Microwave Engineering. (3).

Generation, detection and measurement of microwave energy, analysis of electromagnetic wave propagation in uniform rectangular and cylindrical wave guides, cavity resonators, magnetic materials in microwave applications, millimeter waves.

Three lecture hours per week.

7222. Microwave Electronics. (3).

Analysis of electron beams and their interaction with travelling waves, backward waves and crossed fields. Introduction to coupled mode analysis and design of travelling wave tubes.

Three lecture hours per week.

7231. Transistor Circuit Design. (3).

Small and large signal amplifier design, cascaded amplifiers, stability and feedback, pulse circuits.

Three lecture hours per week.

7241. Network Synthesis. (3).

Introduction to the modern network synthesis techniques. Synthesis using ladder networks, lossy elements and iterative methods.

Three lecture hours per week.

7401. Foundation Engineering. (3).

Critical study of foundation design of completed projects using case records; emphasis on failures and performance records.

Three lecture hours per week.

7411. Advanced Soil Mechanics. (3).

Basic theory and status of current research; applications to foundation problems.

Three lecture hours per week.

7421. Dynamics of Bases and Foundations. (3).

Design of foundations against impact and forced vibrations.

Two lecture, three laboratory hours per week.

7431. Flow of Fluids Through Porous Media. (3).

Fluid seepage and underflow problems; filtration; groundwater flow.

Three lecture hours per week.

7441. Advanced Mechanics of Materials. (3).

Unsymmetrical bending and torsion of flexural members of non-circular cross-section, beams on elastic foundations and other selected topics, deformation beyond the elastic limit, theories of failure.

Three lecture hours per week.

7451. Experimental Stress Analysis. (3).

Application of electric resistance strain gage, photoelasticity and brittle lacquer techniques to the solution of stress analysis problems.

Two lecture, three laboratory hours per week.

7461. Theory of Elasticity. (3).

The linear theory of homogeneous, isotropic, elastic media, analysis of stress and strain in two dimensions, solution of basic engineering problems using various methods including stress functions and approximate methods.

Three lecture hours per week.

7491. Theory of Plates. (3).

Symmetrical and unsymmetrical bending of circular plates, rectangular plates with various boundary conditions, buckling of plates, classical and numerical methods.

Three lecture hours per week.

7493. Theory of Thin Shells. (3).

Fundamental theory of shells of revolution with applications to tanks, pressure vessels, shell roofs and folded plate construction.

Three lecture hours per week.

7501. Plastic Analysis of Metallic Structures. (3).

Structural properties of ductile and strain hardening materials, moment rotation characteristics of structural members, upper and lower bound theorems, minimum weight design.

Three lecture hours per week.

7511. Advanced Structural Analysis. (3).

Formulation of classical and energy methods for the analysis of statically indeterminate structures. Stress analysis and influence lines. Selected numerical analysis techniques and compiler programming.

7512. Matrix Analysis of Structures. (3).

Basic calculus of matrices. Matrix force and displacement methods and introduction to Krau's method of tearing. Linear graph applied to structural analysis.

Three lecture hours per week.

7513. Buckling Analysis of Structures. (3).

Structural instability, beam columns and inelastic column behavior. Analysis of elastic stability of framed structures. Characteristic value problems, approximate methods of solution and matrix formulation.

Three lecture hours per week.

7514. Structural Dynamics. (3).

Free vibration of systems with one and more degrees of freedom. Vibrations of continuous systems. Normal modes and their use in finding the response of structures to transient forces. Analytical, numerical and matrix methods. Analog simulation.

Three lecture hours per week.

7521. Servomechanisms I. (3).

Mathematical description of linear, closed loop automatic control systems; representation by transfer function; stability analysis using various methods.

7522. Servomechanisms II. (3).

Non-linear automatic control systems; analysis by statistical methods and introduction to sampled data control systems.

- 7991. Projects I. (3).**
Independent investigation of a problem selected in consultation with instructor;
report required.
Nine laboratory hours.
- 7992. Projects II. (3).**
Independent investigation of a problem selected in consultation with instructor;
report required.
Nine laboratory hours.
- 7993. Projects III. (3).**
Independent investigation of a problem selected in consultation with instructor;
report required.
Nine laboratory hours.
- 7994. Projects IV. (3).**
Independent investigation of a problem selected in consultation with instructor;
report required.
Nine laboratory hours.
- 7996. Thesis. (6).**

ENGLISH

MR. BITTNER, *Chairman*, MR. BANNON, MR. DAMERON, MR. EVANS,
MR. FARRIOR, MRS. HARE, MR. HOWELL, MR. OSBORNE, MRS. PHILLIPS,
MR. RILEY, MR. A. SMITH, MR. W. SMITH, MR. STAGG, MISS WHITE,
MR. WOOLF, MR. WYNN

- 6231. Chaucer. (3).** (G421)
A study of Chaucer's growth as a literary artist, including a chronological
reading of representative works and discussion of their philosophical and
social context.
- 6234. Milton. (3).** (G422)
A study of Milton's development as a literary artist, with emphasis on his
poetry but with some attention to his prose.
- 6241. The English Novel. (3).** (G451)
Reading of major English novels from the Renaissance to the mid-nineteenth
century related to study of the origin and development of the genre.
- 6242. The English Novel. (3).** (G452)
A study of major English novels from the mid-nineteenth century to the pres-
ent with attention to developments in the genre.
- 6251. English Drama. (3).** (G411)
A study of the development of the genre in England from medieval times to
1642.
- 6252. English Drama. (3).** (G412)
A study of English drama from 1660 to the present, with attention to de-
velopments in the genre.
- 6351. American Drama. (3).** (G413)
The development of American drama as a literary form studied in relation
to the English and European tradition and to currents in American thought.
- 6501. History of the English Language. (3).** (G441)
Study of the relationship of English to other Indo-European languages; of
etymology and the effects of word-borrowing, word-formation, and semantic
change on English vocabulary; and of the development of English sounds,
inflections, and syntax.

- *7211. **Studies in Medieval Literature.** (3).
- *7212. **Studies in Renaissance Literature.** (3).
- *7213. **Studies in Seventeenth Century Literature.** (3).
- *7214. **Studies in Restoration and Eighteenth Century Literature.** (3). (543)
- *7221. **Studies in the Literature of the Romantic Period.** (3). (571)
- *7222. **Studies in Victorian Literature.** (3). (572)
- *7223. **Studies in Contemporary Literature.** (3).
- *7231. **Studies in Shakespeare.** (3).
- *7321. **Studies in American Literature before 1860.** (3). (561)
- *7322. **Studies in American Literature since 1860.** (3). (562)
- *7501. **Studies in English Linguistics.** (3). (501)
7701. **Literary Criticism.** (3).
The major documents in Western criticism, from Plato to the present.
7801. **Bibliography and Methods of Research.** (3). (500)
Examination of bibliographical aids for the study of English and American literature, problems involved in various types of research, and study of the presentation and documentation of scholarly writing.
7995. **Thesis.** (3). (593)
A prospectus for the thesis must be approved by the student's advisor and the departmental chairman before the student registers for this course. Formal application for writing a thesis must be filed with the Dean of the Graduate School at the time of registration. The completed thesis must be approved by at least two readers.
7996. **Thesis.** (6). (596)
(Same as above.)

Geography

MR. SISCO, *Chairman*, MR. MATTHEWS, MR. SOBOL

- **6111. **Earth Science I. The Atmosphere.** (3). (G412)
An analytical study of climatic factors, climatic regions, and climatic effects on man.
- **6121. **Earth Science II. The Earth.** (3). (G411)
An analytical study of land forms, their changes and their uses to man.
- **6122. **Earth Science III. The Soil.** (3). (G413)
An analytical study of soils to include their physical, chemical, and biological qualities, and their classes, uses, and measures of conservation.
- **6131. **Earth Science IV. The Oceans.** (3). (G414)
An analytical study of the oceans to include their physical, chemical, and biological qualities; their movements, resources, climatic influences, and their importance for transportation.

*Courses designated *Studies* provide for specialized work in the literature and in the scholarship of periods, figures, and genres. Content and focus of *Studies* courses may vary from semester to semester. Students will be expected to engage in research leading to the production of substantial papers. Ideally they should have had previous work in the material of these courses. They should, in any case, enroll in *Studies* for which they have had some relevant preparation.

**Geography 6111, 6121, 6122, and 6131 are designed to be of interest and value to students in the physical sciences as well as those in the social sciences; assignments include lectures, laboratory work, and field trips.

- 6304. Western Europe. (3).** (G431)
Lands west of the Iron Curtain.
- 6305. The Soviet Realm. (3).** (G432)
Soviet Union and its satellites.
- 6306. Asia. (3).** (G433)
Lands south of the Soviet Realm.
- 6316. The South. (3).** (G436)
Specially selected regions in the South.
- 6317. Tennessee. (3 or 4).** (G437)
A comparison of the human-use, political, and physical regions of the state.
- 6431. Urban Land Uses. (3).** (G461)
A study of the allocation of land for urban uses; the adjustments and adaptations to existing physical phenomena; the patterns, functions, and forms of specific urban land areas; and some of the continuous problems of urban development and growth.
- 6432. City Planning. (3).** (G462)
The fundamental principles of urban planning, basic elements of a city plan, and the necessity of continuity in planning administration.
- 6433. Urban Renewal. (3).** (G463)
Changing urban land uses, first in areas which must improve or rebuild obsolete patterns, functions, and forms; and second in areas with acceptable uses, structures, and institutions which in the interest and welfare of all the people must have additional space for growth and expansion.
- 6611. Regional Field Study. (6).** (G441-B)
A comparative study of selected regions of the world requiring the minimum of half a semester's work. The course is divided into three parts. The first is devoted to a library study of the regions to be traversed; the second requires a minimum of 16 days of study in the regions; and the third includes oral and written reports on parts one and two.
PREREQUISITE: consent of instructor.
- 7123. Physiography of the Eastern United States. (3).**
Systematic study of the evolution and distribution of landscape forms in the eastern United States. PREREQUISITE: One of the following courses: Geography 1102, 6121, or Geology 1101.
- 7124. Physiography of the Western United States. (3).**
Systematic study of the evolution and distribution of landscape forms in the western United States. PREREQUISITE: One of the following courses: Geography 1102, 6121, or Geology 1101.
- 7202. Economic Geography: Agricultural. (3).** (521)
A survey of agricultural products and agricultural regions of the world, and the role of agriculture in world economy.
- 7212. Economic Geography: Industrial and Commercial. (3).** (522)
A global survey of the extractive industries, of the manufacturing regions, and of the major trade areas and trade routes.
- 7412. Conservation of Natural Resources. (3).** (551)
A survey of the current problems and responsibilities relating to the conservation of our natural resources on the local, state, and national level.
- 7422. Political Geography. (3).** (525)
The content and philosophy of political geography as illustrated by a broad survey of major writers in the field followed by student analysis of individual nation-states.

- 7434. Transportational Lands. (3). (565)**
Planning and allocation of urban land used for water, rail, street, and air transportation.
- 7435. Commercial Lands. (3). (566)**
Planning, analysis, and allocation of urban land used for commercial purposes; particularly, the Central Business District, commercial strips along arterial streets, and the new outlying shopping centers.
- 7441. Population Geography. (3). (524)**
A survey of the density, distribution, migrations, trends, and settlement patterns of world population.
- 7451. Geographic Tools and Techniques. (3). (571)**
An analytical study of the tools and techniques for effective instruction at different levels.
- 7461. Development of Geographic Thought. (3). (590)**
A course vital in acquainting the serious minded geography student with the various types and sources of geographic literature, its nature and content, and the growth and development of geographic thought.
- 7503. Maps, Charts, Graphs. (3). (541)**
A study of the ways by which data are presented and interpreted through maps, charts, graphs, and tables.
- 7601. Seminar in Regional Geography. (3). (531)**
- 7602. Seminar in Climatology. (3). (591-A)**
Systematic study of the classification and distribution of climates. PREREQUISITE: Geography 6111.
- 7621. Problems in Regional Geography. (3). (593)**
A course designed primarily for students who are able to do independent work, and who are not enrolled in school on the campus. PREREQUISITE: Approval of supervising teacher and department chairman.
- 7995. Thesis. (3). (596)**
A student registering for this course must have demonstrated, to two or more members of the geography staff, superior ability in the field of geographic content and in the organization and presentation of subject matter. Application for writing a thesis must be filled out on an approved form after consultation with the major professor and filed with the Dean of the Graduate School at the time of registration. PREREQUISITE: Approval of supervising teacher and department chairman.
- 7996. Thesis. (6). (596)**
(Same as above.)

Health, Physical Education and Recreation

MR. HATLEY, *Chairman*, MR. COLSTON, MR. GARRETT, MR. LAMBERT, MR. SCOTT

- 6205. Supervised Clinical Training in Recreation Therapy. (6).**
Supervised clinical training in the Recreational Therapy Department of the Physical Medicine and Rehabilitation Service at the Memphis V. A. Hospital. Instruction will be given in arts and crafts, radio, television programming, social activities, adapted sports, music, allied ward and clinic activities for patients and varied illnesses and disabilities.

- 6302. Observation in Community Agencies. (3). (G416)**
This course is planned to introduce the student to a wide variety of community health and welfare agencies. Opportunity to visit in official and volunteer agencies is provided. Purpose, objectives, functions and programs are presented by representatives in each agency. Application for the course should be made at least 60 days before the student desires to enroll in the course. **PREREQUISITE:** Permission of Chairman of Department.
- 6402. Field Practice in Community Agencies. (3). (G417)**
This course offers an opportunity for the student to observe and practice under supervision all phases of public health activities in which he would be expected to participate in professional life. Experience is planned to meet the needs of the individual student. Enrollment is limited to students who meet certain departmental requirements. Application for the course should be made at least 60 days before the student desires to enroll in the course. **PREREQUISITE:** Permission of Chairman of Department.
- 6403. Supervised Clinical Training in Corrective Therapy. (6). (G-444)**
(formerly Clinical Practice)
Supervised clinical practice in the Department of Physical Medicine and Rehabilitation Service at the Kennedy V. A. Hospital. Instruction will be given in the conditioning, ambulation and self-care of patients with neurological, pulmonary, geriatric, neuropsychiatric, speech, blind, spinal cord injuries, cardiac, and other types of disabilities.
- 6405. Organization and Administration of Recreation. (3).**
An understanding of community organization, its philosophy, foundation and principles. An understanding of selected administrative practices that relate to successful recreational organization and administration.
- 6503. Organization and Administration of Health and Physical Education. (3). (G482)**
A study of administrative problems of health and physical education, including curriculum, facilities, buying and caring for equipment, general class organization, and organization of an intramural program.
- 6602. Supervision and Administration in Health Agencies. (3). (G450)**
A study of the basic functions, principles and procedures of supervision and administration as applied to health agencies. Emphasis is placed on the relationship and responsibilities of personnel in planning, promoting, improving and evaluating the total health activities in the family-centered health services. Legal and legislative aspects of health activities are included.
- 6702. Trends and Problems in Public Health. (3). (G470)**
A review of the historical development and current trends in professional nursing as a community service; the various needs and demands for medical care; the contribution of the professional personnel in providing for total health services and education.
- 6902. Health Statistics. (3). (G480)**
A study of the statistical method including collection, analysis and presentation of numerical data pertaining to health problems.
- 7103. Foundations of Physical Education. (3). (501)**
The interpretation of the objectives of physical education as related to scientific facts contained within the biological, psychological, and sociological fields of study.
- 7112. Environmental and occupational Health Education. (3). (554)**
An introduction to the nature of environmental and occupational health activities, the proper relationship in development of health activities of mutual interest to private enterprise and health educational agencies is given. Programs for the prevention of accidents, improving sanitary conditions, and reduction of occupational diseases are considered in relation to the effect on well-being of the worker and the general public at home, at work, or in the community.

- 7124. Curriculum Construction in Health Education and Physical Education. (3). (562)**
Consideration is given to the entire program of instruction in health education and physical education in the public schools; methods of instruction, standards of achievement, evaluation of results, and the preparation of courses of study.
- 7132. Current Readings in Health, Physical Education, and Recreation. (3).**
Directed independent reading in the areas of Health, Physical Education, and Recreation. Materials selected to strengthen deficient areas of study. **PREREQUISITE:** Consent of instructor.
- 7134. Supervision of Health and Physical Education. (3). (570)**
The purpose of this course is to present and discuss the duties and problems of the supervisor of health and physical education in the school and community.
- 7142. Seminar in Health, Physical Education and Recreation. (3).**
Special study of selected current problems in these areas. For the most part, individual studies will be pursued with group analysis and discussion at regular class meetings. **PREREQUISITE:** Consent of instructor.
- 7144. Development and Supervision of an Elementary School Health and Physical Education Program. (3). (571)**
Consideration is given to the entire program of instruction in health education and physical education in the elementary schools; methods of instruction, standards of achievement, organization and supervision of the program. (Intended for elementary school teachers as well as principals and supervisors).
- 7152. Special Problems in Health Education. (1 to 3). (591)**
This course is designed to afford opportunity for prospective or in-service school and professional personnel to work individually or in groups in carrying out a research project.
- 7153. Special Problems in Physical Education. (1 to 3). (591)**
This course is designed to afford opportunity for prospective on in-service school and professional personnel to work individually or in groups in carrying out a research project.
- 7204. Introduction to Research in Health and Physical Education. (3). (502)**
A study is made of the various methods and techniques of research. A potential problem is selected, analyzed and written according to research standards.
- 7305. Foundations of a Philosophy for American Recreation. (3). (503)**
Deals with the development of a recreation philosophy for America. Studies the social and economic factors that have influenced leisure and concepts of recreation.
- 7404. Measurement and Evaluation in Health and Physical Education. (3). (510)**
This course includes selection, application and evaluation of certain tests appropriate to these areas.
- 7405. Program Planning in Recreation. (3).**
A study of the needs, interests, and problems of people with specific reference to age. A study of social forces affecting recreational planning and programming. Development of an understanding of the principles of program planning, development, and management, including organization, direction, and supervision.
- 7505. Administration and Supervision of Park and Municipal Recreation. (3). (526)**
(formerly Organization and Administration of Group Recreation)
A study of the development of the recreational movement. Principles and practices in the administration of a wholesome leisure-time program and the place of the school and its personnel in community recreational life.

- 7603. The Administration of Athletics. (3). (533)**
For athletic directors, supervisors, athletic coaches and principals. A study of representative athletic administrative procedures for colleges, public school systems, and municipal athletic leagues. Fiscal procedures and business management are stressed.
- 7702. Health Education in Organic and Functional Diseases. (3). (551)**
The cause, the prevention and the public health aspect of control of certain organic and degenerative diseases are studied. Stress is placed on educational methods of overcoming public attitudes of fear, superstition, apathy and misconceptions surrounding such conditions as diabetes, heart disease, cancer, mental illness and geriatrics.
- 7802. Community Health Education. (3). (552)**
Attitudes of fellowship between professional health workers and non-professional citizens in their effort to promote optimum health are developed. Consideration is given to processes and techniques utilized to awaken awareness in individuals and groups to health problems and to stimulate positive action for the solution of these problems through the use of mass media and group dynamics. Health propaganda materials are collected, analyzed and interpreted.
- 7902. Health Guidance and Counseling. (3). (553)**
A study is made of the role and the techniques of the guidance counselor employed to assist individuals to recognize direct personal health problems which arise from physical, emotional and social causes; and to use effectively scientific health facilities in the solution of these problems. Procedures for establishing and using confidential records and referral to professional guidance and rehabilitation agencies are investigated.
- 7995. Thesis. (3). (593)**
Application for writing a thesis must be filled out on an approved form after consultation with the major professor and filed with the Dean of the Graduate School.
- 7996. Thesis. (3). (596)**
Application for writing a thesis must be filled out on an approved form after consultation with the major professor and filed with the Dean of the Graduate School.

History

MR. BOOM, *Chairman*, MR. CHUMNEY, MR. CROUSE, MR. GILLASPIE,
MR. KRIEGLER, MR. LEON, MR. ORR, MR. PIERCE, MISS TROTTER,
MR. TUCKER, MR. WHITE, MR. WILSON

- 6160. History of Russia. (3). (G402)**
A survey of Russian history from early times to the present.
- 6240. History of Mexico. (3). (G471)**
A survey of Mexico, from independence to the present.
- 6250. History of Brazil. (3). (G472)**
A survey of Brazil, from independence to the present.
- 6370. The Medieval World. (3). (G451)**
A study of the history of institutional forms beginning with the decline of the Roman Empire and ending with the beginnings of Renaissance life.
- 6380. The Renaissance World. (3). (G452)**
A study of the achievements and forces, political and economic, social and cultural, creative and intellectual, which made up this fascinating foundation of modern European civilization.

- 6390. Europe in the Age of the Reformation. (3).**
A consideration of the religious struggles, the social and intellectual milieu in the sixteenth and early seventeenth centuries.
- 6400. Europe in the Age of Reason. (3).**
A consideration of the growth of royal absolutism, the political conflicts, the baroque synthesis, the rise of modern science, and Enlightenment thought in the seventeenth and early eighteenth centuries.
- 6440. The Era of the French Revolution. (3). (G411)**
A study of the Enlightenment, the French Revolution, and the Napoleonic era.
- 6450. Europe in the Nineteenth Century. (3). (G412)**
A study of Europe during the period 1815-1914.
- 6460. Europe in the Twentieth Century. (3). (G413)**
The study of Europe since the outbreak of World War I.
- 6501. Intellectual and Social History of Europe, I. (3). (G481)**
Especially designed to appeal to history majors, this course considers intellectual history from the 12th century Renaissance through the period of the Thirty Years' War.
- 6502. Intellectual and Social History of Europe, II. (3). (G482)**
Especially designed to appeal to history majors, this course considers intellectual history in the Enlightenment, the Romantic Era, and the Liberal Tradition.
- 6620. Colonial America, 1607-1763. (3). (G421)**
A study of English America before 1763. Considerable attention is also given to Spanish, French, and Dutch colonization.
- 6630. Revolutionary Era, 1763-1790. (3). (G422)**
A study of the forces that brought on the American Revolution, the Revolution, and the founding of the Federal Union.
- 6640. Early National Period, 1790-1850. (3). (G423)**
A study of American history from unification until the beginnings of division.
- 6660. Civil War, 1850-1865. (3). (G424)**
A study of division and conflict.
- 6670. Reconstruction, 1865-1877. (3).**
A study of national and sectional issues following the Civil War.
- 6680. Emergence of Modern America, 1877-1914. (3). (G425)**
A study of the United States from the end of the Reconstruction to the outbreak of World War I.
- 6700. Recent American History, 1914—present. (3). (G426)**
A study of the United States from World War I to the present.
- 7000. Introduction to Historical Research and Writing. (3). (500)**
A study of the mechanical techniques of historical composition, the nature and use of various kinds of historical source materials, bibliographical aids, and methods of historical synthesis. Required of all history majors.
- 7120. Studies in British History Since 1485. (3). (515)**
Conference and reports, three hours a week.
- 7160. Studies in the Soviet Union and World Communism. (3). (514)**
Conference and reports, three hours a week.
- 7210. Studies in Latin American History. (3).**
Conference and reports, three hours a week.

- 7320. Studies in Ancient History. (3).** (511)
Conference and reports, three hours a week.
- 7400. Studies in Modern European History. (3).**
Conference and reports, three hours a week.
- 7521. Studies in European Diplomacy, 1848-1919. (3).** (512)
Conference and reports, three hours a week.
- 7522. Studies in European Diplomacy, 1919-1939. (3).** (513)
Conference and reports, three hours a week.
- 7630. Studies in Early American History (to 1800). (3).** (521)
Conference and reports, three hours a week.
- 7640. Studies in United States History, 1800-1865. (3).** (522)
Conference and reports, three hours a week.
- 7680. Studies in United States History, 1865-1917. (3).**
Conference and reports, three hours a week.
- 7700. Studies in United States History, 1917-1950. (3).** (523)
Conference and reports, three hours a week.
- 7920. Studies in Southern History. (3).** (524)
Conference and reports, three hours a week.
- 7940. Studies in the American West. (3).** (525)
Conference and reports, three hours a week.
- 7960. Studies in State and Local History. (3).** (527)
Conference and reports, three hours a week.
- 7996. Thesis. (6).** (596)
The student must write and defend satisfactorily a thesis on a subject approved by his major professor.

Industrial Technology

MR. COLTHARP, *Chairman*, MR. BROTHERTON, MR. OGLE, MR. SIMMONS

- 6470. Production Control. (3).** (G447)
(Also offered as Management 6520)
A study of the elements of production and their coordination.
PREREQUISITE: Industrial Technology major or minor.
- 6480. Plant Layout. (3).** (G448)
(Also offered as Management 6530)
A study of industrial and educational plants, with emphasis on floor plans and placement of facilities. PREREQUISITE: Industrial Technology major or minor.
- 6490. Time and Motion Analysis. (3).** (G449)
(Also offered as Management 6540)
A study of work simplification techniques, including analysis of jobs and trades. PREREQUISITES: Industrial Technology 6470 and Industrial Technology major or minor.

Library Service

MR. RUMBLE, *Chairman*, MRS. ALGEE

MRS. CARIANI, MRS. MAHOOD

- 6231. Organization of Materials. (3).** (G411)
Includes instruction and practice in simplified procedures for acquisition, preparation, organization and circulation of books and related library materials, such as pamphlets, periodicals and audio-visual aids.

- 6232. Cataloging and Classification. (3). (G412)**
Introduction to principles underlying the classification of books and simplified techniques of cataloging books and other materials. The abridged Dewey Decimal Classification scheme is used and the use of printed cards is stressed.
- 6331. School Library Administration. (3). (G421)**
The library is treated as a service agency in this course. Emphasis is given to the place of the library in the instructional and guidance program of the school and to the philosophy and purposes of libraries and librarianship. Included are such problems as standards and evaluation, public relations and publicity, support, housing and equipment, training of assistants and library study hall relationships. Field trips are made to different types of libraries.

Management

MR. HODGETTS, *Chairman*, MR. MARKLE, MR. NEWKIRK, MR. SANDERS

- 6210. Personnel Administration. (3). (G421)**
Employer-employee relationships; job analysis; recruitment, selection, training, transfer, promotion, and dismissal of employees; industrial unrest; wage plans and policies; employee health, interest and morale; dealing with unions. PREREQUISITE: Economics 3210 or permission of instructor.
- 6220. Collective Bargaining. (3). (G422)**
Labor-management relations from the standpoint of collective bargaining contracts. Emphasis is given to the process of negotiating agreements, including procedures, tactics and subject matter, PREREQUISITE: Economics 3210.
- 6310. Real Estate Law. (3). (G431)**
This course covers law and legal instruments as applied to real estate. It is designed to serve the needs of property owners and those engaged in the real estate business. PREREQUISITES: Management 3310.
- 6320. Real Estate Finance. (3). (G432)**
Examination and analysis of the sources of funds for financing all kinds of real estate transactions made, including FHA and VA types. PREREQUISITE: Management 3310.
- 6330. Property Management. (3). (G433)**
The fundamentals of management of real estate are developed. Examination and analysis of problems, duties, and responsibilities of the property manager are covered. PREREQUISITE: Management 6310.
- 6340. Real Estate Appraisal. (3). (G434)**
This course covers the fundamentals of appraising residential, commercial, and industrial real estate. PREREQUISITE: Management 3310.
- 6350. Industrial Real Estate. (3). (G430)**
All phases of industrial real estate practices are covered. These include attractions to industry; financing industrial real estate; appraising industrial real estate; and selecting of industrial sites. PREREQUISITE: Management 3310.
- 6410. Management of Business Enterprise. (3). (G442)**
Consideration is given to over-all policy formation and practice in the operation of new and going business concerns. Emphasis is placed on problems of nonfinancial management in the small firm. PREREQUISITE: Management 3410.
- 6420. Human Relations in Business. (3). (G443)**
A study of the principles of human relations as applied to business management. PREREQUISITE: Management 3410.

- 6510. Industrial Management II. (3). (G445)**
A course devoted to solving typical problems that arise in the planning, layout, control, operation, and administration of a manufacturing enterprise. **PREREQUISITE:** At least three of the 3000 courses in this major or permission of the instructor.
- 6520. Production Control. (3). (G447)**
A study of the elements of production and their coordination emphasized by visits to industrial plants. Three hours lecture.
- 6530. Plant Layout. (3). (G448)**
Study of industrial plants—with emphasis on floor plans and placement of facilities. Three hours lecture. **PREREQUISITE:** Permission of instructor.
- 6540. Time and Motion Analysis. (3). (G449)**
Work simplification, including analysis of jobs and trades, as applied in time and motion. Three hours lecture. **PREREQUISITE:** Management 6520.
- 6550. Statistical Quality Control. (3). (G472)**
A course emphasizing the modern statistical approach to the control of industrial quality. Topics treated include the Shewart Control Chart for Variables and Attributes, Acceptance Sampling, and Introduction to the Design of Industrial Experiments. **PREREQUISITE:** Management 3710.
- 6610. Corporation Finance. (3). (G441)**
Advanced treatment of financial management with emphasis on small and medium-sized enterprise and the forces underlying determination of policy. Financial problems are considered in connection with refunding, reorganization, mergers, and consolidations. **PREREQUISITE:** Management 3410.
- 6710. Business Statistics II. (3). (G471)**
Extension of the range of topics covered in Business Statistics I to include methods of correlation, analysis of variance, forecasting, and general business research. **PREREQUISITE:** Management 3710.
- 6750. Electronic Data Processing and Programming. (3). (G481)**
This course is concerned with programming and operation of electronic data processing equipment. Machines language and programming system will be studied in detail including FORTRAN. Introduction will be made to computer applications to business. **PREREQUISITE:** Management 3750 or permission of instructor.
- 6760. Application of Computers to Modern Business. (3). (G482)**
A continuation of Management 6750, stressing computer application to solution of business problems in such areas as: Sales analysis, Sales Forecasting, accounting, personnel, Inventory, Management, Production control, and Distributive applications. Introduction will also be made to management science applications and simulation. **PREREQUISITE:** Management 4750 or permission of instructor.
- 6810. Property and Casualty Insurance. (3). (G435)**
The form and functions of fire, marine, automobile, general liability, and other types of property and casualty insurance with emphasis on their application to commercial and industrial occupancies. A survey of current underwriting practice. **PREREQUISITE:** Management 3810.
- 6820. Life and Health Insurance. (3). (G436)**
The functions of life and health insurance with emphasis upon the need for insurance and the service of life and health insurance to the American family and community. A study of the mechanics of private and public insurance and annuities. **PREREQUISITE:** Management 3810.

- 6830. Insurance Agency Management. (3). (G437)**
Organization, management, and operation of insurance sales agencies. Equal emphasis is given to the problems and practices of the company owned and the independent agency. PREREQUISITE: Management 3810.
- 7010. Law of Taxation of Estates, Inheritances, and Gifts. (3). (503)**
A survey course of the law of taxation as applied to the transmission of property by gift or death and its impact upon accumulations of wealth. The constitutional basis, statutory implementation, administrative regulation, and court interpretation of the laws of the United States and the various states. PREREQUISITE: Management 3020.
- 7020. Estate Planning. (3). (505)**
Estate planning from an individual viewpoint design to create, maintain, and distribute the maximum estate possible. Consideration is given to the aspects of law, insurance, real estate, investments, and taxes as they relate to the creation of estates of individuals and those who will be engaged in assisting others. PREREQUISITE: Management 7010.
- 7210. Seminar in Industrial Relations. (3). (523)**
(formerly Advanced Industrial Relations)
A study of selected problems in labor-management relations. PREREQUISITE: Economics 3210.
- 7410. Advanced Management of Business Enterprise. (3). (542)**
The development of the Top Management viewpoint, the basic objective being to develop executive abilities and creative thinking. Selected problem areas of modern business will be explored, alternative courses of action appraised, and decision-making ability developed. PREREQUISITE: Management 4610, 4410, and Marketing 3010.
- 7420. Seminar in Management. (3).**
Special study of selected current quantitative problems in this area. For the most part, individual studies will be pursued with group analysis and discussion at regular class meetings. PREREQUISITE: Consent of instructor.
- 7421. Seminar in Management. (3).**
Special study of selected current qualitative problems in this area. For the most part, individual studies will be pursued with group analysis and discussion at regular class meetings. PREREQUISITE: Consent of instructor.
- 7610. Analysis and Control of Business. (3). (541)**
An overall study of management problems and the application of scientific management techniques to the control of various phases of business operation. Included are: general management controls, financial management controls, sales management controls, production management controls, and personnel control and appraisal. PREREQUISITE: Management 4410 and 4610.
- 7910. Problems in Management. (1-6). (591)**
Directed independent research projects in an area selected by the student with approval of the staff member supervising. PREREQUISITE: 6 hrs. of graduate course work in the area selected.
- 7995. Thesis. (3). (593)**
Application for writing a thesis must be filled out on an approved form after consultation with the major professor and filed with the Dean of the Graduate School.
- 7996. Thesis. (6). (596)**
Application for writing a thesis must be filled out on an approved form after consultation with the major professor and filed with the Dean of the Graduate School.

Marketing

MR. SPINDLER, *Chairman*, MR. DODGE, MR. SUMMER, MR. TONNING

- 6010. Marketing Administration. (3). (G401)**
A case study of actual business marketing problems and the techniques used to solve them.
PREREQUISITE: Marketing 3010.
- 6080. Marketing Research. (3). (G491)**
Research methods and procedures used in the field of marketing to help solve marketing problems.
PREREQUISITES: Management 3710 and Marketing 6010.
- 6110. Industrial Advertising. (3). (G454)**
A study of advertising procedures and techniques which are especially useful to production industry. Primary emphasis is placed upon trade papers and catalogs.
PREREQUISITE: Marketing 3140. Spring semester.
- 6120. Television and Radio Advertising. (3). (G455)**
A study of the structure of the commercial broadcasting systems of this country; methods of creating radio and television programs and commercials; campaign and broadcast management; media research.
PREREQUISITE: Marketing 3140 or permission of instructor. Fall semester.
- 6130. Retail Advertising, Display and Promotion. (3). (G456)**
A study of advertising procedures and techniques which are especially valuable to the retailer; techniques of display and promotion.
PREREQUISITE: Marketing 3320. Fall Semester.
- 6140. Advertising Agency Management. (3). (G458)**
A study of the organization and activities of advertising agencies including management responsibilities, time and space buying, media selection, account executive activities, advertising research, creativity, merchandising, and production supervision.
PREREQUISITES: Marketing 6110 and Marketing 6130 or permission of instructor.
- 6220. Purchasing. (3). (G422)**
A study of the organization, principles, policies, procedures and techniques used in effective and efficient procurement by business and industry. Spring semester.
- 6320. Retail Policies and Problems. (3). (G482)**
A study of the problems which retailers are currently facing and an analysis of the policy decisions they must make to effectively meet these problems.
PREREQUISITE: Marketing 3320 or permission of instructor.
- 6330. Credit and Collections. (3). (G485)**
System of credit and collections employed today, significance of credit information, charge account management, and collection correspondence.
- 6410. Sales Management. (3). (G461)**
Organization and operation of the sales department from the administrative standpoint, including procedures in training salesmen.
PREREQUISITE: Marketing 3410.
- 6420. Sales, Supervision, and Training. (3). (G462)**
A balanced study of two sales management problem areas—sales training techniques and field sales supervision. Textbooks and trade literature are surveyed and compared with practices in current usage.
PREREQUISITE: Marketing 6410.

- 6510. Wholesale-Industrial Marketing. (3). (G421)**
A study of problems and policies of wholesale and industrial organizations related to their marketing efforts with emphasis on channels of distribution.
PREREQUISITE: Marketing 6010. Fall semester.
- 6520. Product Planning. (3). (G425)**
Study of a product from the idea stage to placement of the product satisfactorily in the market place.
PREREQUISITE: Marketing 6010.
- 6530. International Marketing. (3). (G428)**
A study of the bases and promotion of foreign trade; international marketing organizations and methods; technical and financial features of international marketing. Fall semester.
- 6540. Cotton Marketing. (3). (G435)**
Cotton as a special commodity is traced through the stages of production, processing, and marketing in the raw state; spinning and weaving or knitting; finishing; fabrication; and distribution at the wholesale and retail levels.
PREREQUISITE: Marketing 4010 or permission of instructor. Fall semester.
- 6610. Human Relations in Business. (3). (Mgmt. G443)**
A study of the principles of human relations as applied to business management. PREREQUISITE: Management 3410.
- 6620. Business Cycles and Forecasting. (3). (Econ. G414)**
Study of the factors involved in the movements of business activity, irregular, seasonal, regular, and trend; and the application of the same for forecasting purposes in business.
PREREQUISITE: Economics 3610, and Management 3710.
- 7010. Marketing Management. (3). (502)**
A study of policy determination and functions of the senior marketing executive with reference to functions, delegation of authority, and responsibilities of line and staff personnel, planning for growth and interpreting marketing knowledge.
- 7020. Pricing and Price Policies. (3). (521)**
An examination of the role of prices in our economy and the problem of price making under conditions of competition, monopoly, and monopolistic competition with emphasis on the problems of non-price competition.
- 7030. Seminar in Marketing. (3). (531)**
Special study of current problems in marketing. For the most part, individual studies will be pursued with group analysis and discussion.
PREREQUISITE: Consent of instructor.
- 7040. Marketing Thought. (3). (541)**
An introduction of the concepts and theories advanced in the development of institutions, channels, functions and processes of marketing and the contribution of other disciplines to marketing theory.
PREREQUISITE: Consent of instructor.
- 7080. Applied Marketing Research. (3). (592)**
Development and application of research procedures to actual business problems.
PREREQUISITE: Marketing 6080 or permission of instructor.
- 7081. Business and Economic Research. (3).**
Theory and practice in research at an advanced level.
PREREQUISITE: Management 3710.

7911. **Problems in Advertising.** (1-6). (591B)
 7912. **Problems in Physical Distribution.** (1-6). (591E)
 7913. **Problems in Retail Management.** (1-6). (591C)
 7914. **Problems in Sales Management.** (1-6). (591D)
 7915. **Problems in Wholesale-Industrial Marketing.** (1-6). (591A)
 Directed independent research projects in an area selected by the student with the approval of the staff member supervising.
 PREREQUISITE: 6 hrs. of Upper Division (undergraduate) course work in the area selected.

Mathematics

MR. KALTENBORN, *Chairman*, MR. STEPHENS, MR. WALKER

6151. **History of Mathematics.** (3). (G-421)
 The development of mathematics from the earliest times to the present; problem studies; parallel reading and class reports. PREREQUISITE: Mathematics 3111.
 6221. **Theory of Numbers.** (3). (G-422)
 Number theoretic functions; congruences; quadratic residues; Diophantine equations; continued fractions. PREREQUISITE: Mathematics 3112.
 6241. **Linear Algebra and Matrix Theory.** (3).
 Vector spaces, linear transformations and matrices, sets of linear transformations. PREREQUISITE: Mathematics 2322.
 6351. **Real Variables.** (3). (G-481)
(formerly Real Analysis)
 Sets and operations; equivalence of sets; real numbers; limit theorems; continuous functions; uniform continuity and convergence; integration; differentiation. PREREQUISITE: Mathematics 2322, 3112.
 6361. **Complex Variables.** (3). (G-491)
(formerly Complex Analysis)
 Complex numbers; analytic functions; mapping by elementary functions; complex integration; power series; conformal mapping. PREREQUISITE: Mathematics 2322, 3112.
 6391. **Applied Mathematics.** (3).
 Elliptic integrals; Gamma and Beta functions; other special functions including Hermite, Bessel, Legendre, and Laguerre. PREREQUISITE: Mathematics 3391.
 6392. **Applied Mathematics.** (3).
 Fourier series; partial differential equations; vector analysis. PREREQUISITE: Mathematics 6391.
 6411. **Topology.** (3).
(formerly Introduction to Topology)
 Introductory set theory; metric spaces; topological spaces; mappings; Hausdorff spaces; connectedness and compactness. PREREQUISITE: Mathematics 2322, 3112.
 6721. **Numerical Analysis.** (3).
 Finite differences; approximate solutions of algebraic and transcendental equations, with applications. PREREQUISITE: Mathematics 3711.
 6722. **Numerical Analysis.** (3).
 A continuation of Math 6721; numerical methods for solving applied problems in calculus and differential equations. PREREQUISITE: Mathematics 6721.

- 7171. Workshop in Junior High Mathematics. (3). (531)**
This course is designed to provide in-service training to teachers in junior high school mathematics so that they may help in planning and implementing broad revisions in the mathematics programs at their respective schools.
- 7172. Workshop in Junior High Mathematics. (3). (532)**
Continuation of Math 7171.
- 7173. Workshop in Senior High Mathematics. (3). (541)**
This course is designed to provide in-service training to teachers of senior high school mathematics so that they may help in the planning and implementing broad revisions in the mathematics programs at their respective schools.
- 7174. Workshop in Senior High Mathematics. (3). (542)**
Continuation of Math 7173.
- 7181. Introduction to Modern Mathematics. (3). (501)**
Basic theory in the logical foundations of arithmetic; the postulational development of the number system; symbolic logic.
- 7221. Algebraic Number Theory. (3).**
Quadratic reciprocity; farey fractions; the distribution of prime numbers; algebraic numbers. PREREQUISITE: Mathematics 6221.
- 7222. Algebraic Number Theory. (3).**
Integers in algebraic number fields; unique factorization; Euclidean domains; polynomials over a field; cyclotomic polynomials; ideal theory; Fermat's Last Theorem; Minkowski's Lemma; theory of units. PREREQUISITE: Mathematics 7221.
- 7261. Algebraic Theory. (3).**
Theory of groups, rings and fields, with applications. PREREQUISITE: Mathematics 3112 or 7181.
- 7292. Abstract Algebra. (3).**
Theory of semi-groups, groups, rings, ideals, modules, integral domains and fields; extension of rings and fields; lattices. PREREQUISITE: Mathematics 7261.
- 7351. Real Variables. (3).**
Convergence of series; power series; functions of several variables; mappings; partial derivatives; iterated integrals; improper integrals. PREREQUISITE: Mathematics 6351.
- 7361. Complex Variables. (3).**
Complex integration; applications of Cauchy's theorem, conformal mapping. PREREQUISITE: Mathematics 6361.
- 7381. Calculus for Secondary Teachers. (3).**
Function concept; elementary function theory; selected topics from analytic geometry and calculus.
- 7391. Special Functions. (3).**
Generating functions, orthogonality, Rodrigues-type relations, pure and differential recurrence relations. PREREQUISITE: Mathematics 6392.
- 7411. Topology. (3).**
Product spaces; separable spaces; completeness; dimension; simplexes; complexes; chains; homologies. PREREQUISITE: Mathematics 6411.
- 7511. Geometric Theory. (3).**
Foundations of geometry; extensions of Euclidean geometry; non-Euclidean geometry; introduction to projective geometry. PREREQUISITE: Mathematics 3112 or 7181.

7521. Algebraic Geometry. (3).

Noetherian rings; valuation rings; absolutely irreducible varieties; projective varieties; applications to elimination theory. **PREREQUISITE:** Mathematics 7261.

7681. Probability for Secondary Teachers. (3).

Probability spaces, theory of statistical inference, physical interpretations of probability.

Modern Languages

MR. LONG, *Chairman*, MR. RATIU, *Coordinator*, MR. BROWN, MR. MORRISON,
MR. PARKINSON, MR. PELL

FRENCH

6301. French Phonetics. (3).

The theory and practice of French sounds; especially recommended for teachers of French. **PREREQUISITE:** Three years of college French or permission of the instructor.

6431. The Modern French Novel. (3).

The French novel from the Revolution to the twentieth century, treating the movements of Romanticism, Realism, and Naturalism as they are reflected in the works of such authors as Balzac, Stendhal, Flaubert, and Zola.

6432. The Contemporary French Novel. (3).

A general survey of the twentieth-century French novel, treating the works of such authors as Proust, Gide, Mauriac, Malraux, Sartre, Camus, Maurois, and others.

6451. The Modern French Drama. (3).

French drama from 1800 to 1870, including such authors as Hugo, Vigny, Musset, Scribe, Augier, and Dumas fils.

6452. The Contemporary French Drama. (3).

From Becque and his school, the *Théâtre Libre*, and Rostand to the present, with emphasis on the twentieth-century drama and such playwrights as Pagnol, Claudel, Tristan Bernard, Giraudoux, Anouilh, Montherlant, Camus, Sartre, Cocteau, and others.

6471. Nineteenth-Century Poetry. (3).

French poetry from Chenier through the Parnassians and the Symbolists.

7301. Advanced Grammar. (3).

A thorough and systematic presentation of French grammar with an emphasis on teaching. Required of all graduate assistants in French and recommended for all French majors.

7401. Old French. (3).

Introductory seminar. Historical grammar and study of the *Chanson de geste*; also the *Lais* of Marie de France and *Aucassin et Nicolette*.

7421. The French Renaissance. (3).

The new world—literary, as seen in the works of Ronsard and the Pleiade; philosophical and political, in those of Rabelais and Montaigne.

7425. Classicism Prior to 1660. (3).

Precept and example before Corneille: Jean de Mairet. The theater of Corneille and the early plays of Molière. (To be also listed as 5425.)

7426. Classicism After 1660. (3).

The impact of Boileau and *l'Art poétique* in crystallizing the classical principles and pattern. Masterpieces of Molière and Racine. Representative selections from masters of the other *genres* in this period of French literature. (To be also listed as 5426.)

7431. Romanticism. (3).

The rise and decline of French Romanticism in the novel, poetry, and drama: Rousseau and Bernardin de Saint-Pierre; Chateaubriand and Madame de Staël; Lamartine, Vigny, Hugo, Musset, George Sand, Stendhal.

7481. Realism and Naturalism. (3).

The impact of positivism and scientific methods on French literature. Realism in Balzac, Flaubert, and Dumas fils; Naturalism in Zola, les Frères Goncourt, and the naturalistic theatre.

7491. Proseminar in French Literature. (3).

Introduction to research through investigations of limited scope. May be repeated for credit.

7492. Research in French Studies. (1-3).**7531. The Age of the Enlightenment. (3).**

Comprehensive study of literary trends and innovations within the major *genres* as related to liberal ideas underlying the philosophy of Montesquieu, Voltaire, Diderot, Rousseau, and their contemporaries.

7791. The Teaching of French. (0).

Required of all graduate assistants in French.

7995. Thesis. (3).

This course is designed for students writing the thesis for French in the Department of Modern Languages. The thesis must be approved by a committee consisting of the department chairman, the department coordinator for graduate studies, the permanent adviser, and a professor from the thesis field. Approval forms are provided in the Graduate Office and final approval is given by the Dean. More detailed information may be provided by the adviser.

GERMAN

6421. Mysticism and the Baroque Period. (3).

Studies in the writings of the great German mystics, emphasizing their influence on the poetics of the Baroque period.

6441. The Age of Enlightenment. (3).

Readings in Lessing (exclusive of the dramas), Wieland, the early Goethe, the early Schiller, and others, with lectures on the philosophical, political, and social backgrounds.

PREREQUISITE: German 3412 or permission of the instructor.

6461. Contemporary Prose and Poetry. (3).

Analysis and discussion of the short stories of Hauptmann, Mann, Schnitzler, Kafka, and others; and the lyrics of Hofmannsthal, Rilke, George, Benn, and others.

6462. Contemporary Drama. (3).

Analysis and discussion of plays by Hauptmann, Toller, Kaiser, Paul Ernst, and others.

6481. The Classical Period. (3).

Selected plays by Lessing and Schiller, with lectures on the historical, literary, and philosophical backgrounds.

6482. The Classical Period. (3).

The major plays and certain prose works of the young Goethe read and discussed in the light of the age and of the author's development.

- 7301. Advanced Grammar. (3).**
A thorough and systematic presentation of grammar with an emphasis on teaching. Required of all graduate assistants in German and recommended for all German majors.
- 7303. History of the German Language. (3).**
The development from Primitive Germanic to New High German.
- 7304. Advanced Conversation and Stylistics. (3).**
Oral and written practice in literary German.
- 7401. Old High German. (3).**
A specialized study of Old High German grammar and representative extant documents augmented by a comparative study of Older Germanic language, history, and literature.
- 7421. Middle High German. (3).**
Grammar with selected readings.
- 7431. Romanticism. (3).**
German literature of the Early and Late Romantic Eras. Lectures.
- 7451. Goethe's Faust. (3).**
Interpretation of Parts I and II with reference to antecedents, genesis, and relationship to the poet's life and times.
- 7481. The Age of Realism. (3).**
German literature and thought from 1830 through 1880. Lectures with extensive readings.
- 7482. Naturalism, Impressionism, and Expressionism. (3).**
Literary and philosophical movements from 1880 through 1930. Lectures with extensive readings.
- 7491. Proseminar in German Literature. (3).**
Introduction to research through investigations of limited scope. May be repeated for credit.
- 7492. Research in German Studies. (1-3).**
- 7791. The Teaching of German. (0).**
Required of all graduate assistants in German.
- 7995. Thesis. (3).**
This course is designed for students writing the thesis for German in the Department of Modern Languages. The thesis must be approved by a committee consisting of the department chairman, the department coordinator for graduate studies, the permanent adviser, and a professor from the thesis field. Approval forms are provided in the Graduate Office and final approval is given by the Dean. More detailed information may be provided by the adviser.

SPANISH

- 6301. Spanish Phonetics. (3).**
Principles of Spanish sound-production and introduction to modern Spanish dialectology. This course is especially designed for teachers who wish to broaden their scope of the language and to study the finer points of describing and reproducing the Spanish phonemic system.
- 6421. The Golden Age. (3).**
A detailed study of Spanish lyric poetry and drama up to 1700. PREREQUISITES: Spanish 3411 and 3412, or permission of the instructor.

- 6422. The Golden Age. (3).**
A detailed study of Spanish prose up to 1700. **PREREQUISITES:** Spanish 3411 or 3412, or permission of the instructor.
- 6431. Contemporary Spanish Prose. (3).**
A study of the prose of the Generation of 1898 and after. Outstanding writers in the fields of philosophy, the essay, the novel, and short story from Angel Ganivet to Camilo José Cela and Anna María Matute. **PREREQUISITES:** Spanish 3411 and 3412, or permission of the instructor.
- 6432. Contemporary Spanish Poetry and Drama. (3).**
A study of Spanish poetry and drama from the Generation of 1898 to the present. Among the authors studied are Antonio Machado, Juan Ramón Jiménez, Eduardo Marquina, J. Benavente, Alejandro Casona, and F. García Lorca. **PREREQUISITES:** Spanish 3411 and 3412, or permission of the instructor.
- 6561. Spanish-American Short Story. (3).**
A critical analysis of Spanish-American short stories as they reflect predominant social and ethical problems, and the authors' responses to literary influences from Europe and North America.
- 6562. Spanish-American Novel. (3). (423)**
A critical study of representative works by such novelists as Fernández de Lizardi, Blest Gana, Isaacs, and Guiraldes.
- 6591. Spanish-American Drama, Poetry, and Essay. (3). (421)**
A critical study of the development of the drama and poetry of Spanish America in comparison with and in contrast to the drama and poetry of Spain, and a study of the Spanish-American essay in its political and sociological as well as its literary aspects.
- 7301. Advanced Grammar. (3).**
A thorough and systematic presentation of Spanish grammar with an emphasis on teaching. Required of all graduate assistants in Spanish and recommended for all Spanish majors.
- 7401. Old Spanish Language and Literature. (3).**
Castilian phonology, morphology, syntax, and vocabulary, following upon an introduction to the general characteristics of Ibero-Romance and medieval Spanish dialects. Linguistic and literary study of medieval Spanish texts.
- 7421. The Picaresque Novel. (3).**
Lazarillo de Tormes, *Guzmán de Alfarache*, and other novels of the *genre* in the seventeenth century.
- 7431. Nineteenth Century Spanish Literature, I. (3).**
Romantic poetry and drama studied in the works of such writers as the Duke of Rivas, Espronceda and José Zorrilla. Post romantic poetry and drama. Bécquer. *Costumbrismo*. The romantic and historical novel.
- 7432. Nineteenth Century Spanish Literature, II. (3).**
The regional novel, the realistic novel and the naturalistic novel are studied in the works of such writers as Fernán Caballero, Valera, Pereda, Palacio Valdés, Galdos, and Blasco Ibañez. The poetry of Campoamor and Núñez de Arce. The theatre. Orators and historians.
- 7481. The Generation of 1898. (3).**
Ganivet, Unamuno, Azorín, A. Machado, Valle-Inclán, Baroja, Pérez de Ayala, Miró, Ortega.
- 7482. The Modernist Movement. (3).**
Rubén Darío and his influences upon Hispanic Literature. Readings from the best-known *modernistas* of Spain and Spanish America.

- 7491. Proseminar in Spanish Literature. (3).**
Introduction to research through investigations of limited scope. May be repeated for credit.
- 7492. Research in Hispanic Studies. (1-3).**
- 7791. The Teaching of Spanish. (0).**
Required of all graduate assistants in Spanish.
- 7995. Thesis. (3).**
This course is designed for students writing the thesis for Spanish in the Department of Modern Languages. The thesis must be approved by a committee consisting of the department chairman, the department coordinator for graduate studies, the permanent adviser, and a professor from the thesis field. Approval forms are provided in the Graduate Office and final approval is given by the Dean. More detailed information may be provided by the adviser.

Music

MR. HARRIS, *Chairman*, MR. EAHEART, MR. FERGUSON, MR. HERMANN,
MR. LABOUNTY, MR. LUBRANI, MR. SMIT, MR. WADE

- 7030. Composition. (3). (505)**
Free composition in all forms. Applicants to this course are required to submit original works in various forms and media as proof of maturity and technical preparation for graduate work. The course number may be repeated with the instructor's permission for successive semesters. Individual instruction with added fees as for applied music.)
- 7031. Theory I. (3). (511)**
Advanced harmony and counterpoint in sixteenth, seventeenth, and eighteenth century styles. Writing and analysis in the contrapuntal style of the sixteenth century in four to eight voices, triple and quadruple counterpoint, pre-fugal styles. Italian and English madrigal. Eighteenth century contrapuntal technique; invention, chorale elaboration, suite, two- and three-voice fugues in the style of Bach and Handel.
- 7032. Theory II. (3). (512)**
Advanced harmony and counterpoint in eighteenth, nineteenth and twentieth century styles. Writing and analysis in the larger eighteenth century forms; four- and five-voice fugues, double fugue, chaconne, passacaglia, and orchestral forms. Chromatic harmony. Impressionism. Harmonic and contrapuntal practices in the twentieth century.
- 7131. A Study of Musical Styles from 1600 to 1800. (3). (501)**
The musical precedents and the evolution of the several styles and forms of Early, Middle and Late Baroque, and Classic Eras, focusing in depth on certain works of Monteverdi, Handel, Bach, Gluck, Haydn and Mozart.
- 7132. A Study of Musical Styles from 1800 to the Present. (3). (502)**
The maturing of Beethoven; the composer-creator as originator of rules for art; expansion of tonal resources; expansion of instrumental forms; the resurgence of the short character piece; the song-cycle; program music and new formal organizational principles; the virtuoso and virtuosic styles; Italian opera, Drama Lyrique, and the Music Drama; the Nationalistic schools, Impressionism, Dynamism, Expressionism, Neo-Classicism, new media.
- 7133. Choral Literature and Techniques. (3). (517)**
A survey of choral literature from Dunstable to the present, using scores, records, and class performance. Analysis of the scores in terms of style, form, and performance problems. Techniques of teaching and conducting unfamiliar styles.

- 7134. Instrumental Literature and Techniques. (3). (518)**
Specific and intensive research in each student's major instrument, covering (1) history of the instrument, (2) texts, methods and periodicals, (3) orchestral studies, (4) solo and ensemble literature, and (5) listening and performance.
- 7231. Advanced Conducting. (3). (516)**
Conducting the concert band, the symphony orchestra, and the chorus in the larger musical forms. Emphasis on interpretation.
- 7232. Music Education Seminar. (3). (520)**
Historical development and basic philosophies in music education. Current trends in school music, curricula, and testing programs. Evaluation of new methods and materials.
- 7921. Chamber Music. (2).**
An elective course in the performance of music in various styles, periods, media. Open to pianists, instrumentalists, and singers with technical proficiency equivalent to undergraduate senior level. Public performance required each semester.
- 7994. Recital. (3).**
Required of the applied music major. Application for credit for the recital must be filled out on an approved form after consultation with the major adviser and filed with the Dean of the Graduate School.
- 7995. Thesis. (3).**
Required of the composition major. A composition or compositions of suitable nature to provide for practical performance in public recital or concert. Application for credit for the thesis must be filled out on an approved form after consultation with the major adviser and filed with the Dean of the Graduate School.

APPLIED MUSIC

- 7320. Brasses. Individual Instruction. (2).**
- 7420. Organ. Individual Instruction. (2).**
- 7520. Percussions. Individual Instruction. (2).**
- 7620. Piano. Individual Instruction. (2).**
- 7720. Strings. Individual Instruction. (2).**
- 7820. Voice. Individual Instruction. (2).**
- 7920. Woodwinds. Individual Instruction. (2).**
- 7340. Brasses. Individual Instruction. (4).**
- 7440. Organ. Individual Instruction. (4).**
- 7540. Percussions. Individual Instruction. (4).**
- 7640. Piano. Individual Instruction. (4).**
- 7740. Strings. Individual Instruction. (4).**
- 7840. Voice. Individual Instruction. (4).**
- 7940. Woodwinds. Individual Instruction. (4).**

APPLIED MUSIC (INDIVIDUAL LESSONS)

ADMISSION TO GRADUATE STANDING: Information regarding the qualifications for admission to an applied music course at the graduate level may be obtained by writing to the Chairman of the Department of Music. Applicants who fail to meet requirements for graduate standing may register for undergraduate credit until the graduate requirements are met.

FEES: See page 25 of this bulletin. Fees are paid to the University at the office of the Business Manager.

CREDITS AND GRADES: Two semester hours of credit will be granted for one thirty-minute lesson weekly; four semester hours of credit will be granted for two thirty-minute lessons weekly. Practice hours will be determined by the instructor to meet the needs of the student. Grades are awarded on the same basis and have the same significance as in any other subject.

EXAMINATIONS: Each student will prepare and perform for members of the faculty of the Department of Music suitable selections and technical exercises of a grade of difficulty appropriate to graduate standing. Examinations will be held in the Music Hall on days set aside for this purpose near the end of each semester. Credit for the course will not be granted to any student who fails to take the examination.

REGISTRATION: Students will register for individual lessons at the same time and in the same manner that they register for other courses.

Philosophy

MR. BARTON, *Chairman*, MR. VAN DE VATE

- 6011. Theory of Knowledge. (3). (G412)**
A critical study of the basic problems of epistemology, with readings in the important philosophers.
PREREQUISITE: Two semester courses in philosophy or permission of the instructor. Offered alternate years.
- 6021. Metaphysics. (3). (G413)**
An analysis of the basic metaphysical concepts and a critical study of old and new theories of the nature of being.
PREREQUISITE: Two semester courses in philosophy or the permission of the instructor. Offered alternate years.
- 6031. The Hegelian Tradition. (3).**
An intensive study of certain aspects of Idealism with special attention to the thought of Hegel, Fichte, and Bradley. **PREREQUISITE:** Two courses in philosophy or permission of the instructor.
- 6301. American Philosophy. (3). (G415)**
The development of the philosophical traditions in the United States from the Puritans to the present and their relationship to the social and cultural history. **PREREQUISITE:** Two semester courses in philosophy, or permission of the instructor. Offered alternate years.
- 6431. Recent Problems in the Philosophy of Language. (3).**
A study is made of the basic characteristics of scientific language; the problems of meaning and existence are given close attention. **PREREQUISITE:** at least two courses in philosophy or permission of the instructor.
- 6441. Phenomenology and Its Historical Background. (3).**
A reading and discussion of basic texts in translation of Husserl's *Ideas*, *Cartesian Meditations* and from the *Crisis of European Science and Phenomenology*.

- 6633. Logic. (3). (G411)**
A study of the basic principles and modes of correct thinking.
PREREQUISITE: Two semester courses in philosophy or permission of the instructor. Offered alternate years.
- 7041. Marxism and Democracy. (3).**
The development of Hegel's political and social philosophy by the "Hegelians of the left," the communists and social democrats; liberal responses to socialist political theory. **PREREQUISITE:** Philosophy 6031.
- 7411. Seminar in the Problems of Current Philosophy. (3). (511)**
Individual research will be encouraged on a topic chosen for discussion at the beginning of each semester. This course will be open only to students who have satisfactorily completed 2 semesters of undergraduate philosophy. (One semester of undergraduate may be accepted by permission of advisor and instructor where student has shown unusual ability.)
- 7412. Seminar in the Problems of Current Philosophy. (3). (512)**
Individual research will be encouraged on a topic chosen for discussion at the beginning of each semester. This course will be open only to students who have satisfactorily completed 2 semesters of undergraduate philosophy. (One semester of undergraduate may be accepted by permission of adviser and instructor where student has shown unusual ability.)

Physics

MR. IJAMS, *Chairman*, MR. GARLAND, MR. WOOLLETT

- 6111. Atomic and Nuclear Physics. (4). (G411)**
A study of atomic structure and behavior, the interaction of atomic particles, nuclear structure, and subatomic particles, radiation and its properties and origin, with some consideration of applications of recent developments in physics. **PREREQUISITES:** Physics 2112 or 2512; Mathematics 2322. *Three lecture, three laboratory hours per week.*
- 6112. Atomic and Nuclear Physics. (4). (G412)**
A continuation of Physics 6111. **PREREQUISITE:** Physics 6111. *Three lecture, three laboratory hours per week.*
- 6211. Optics. (4). (G421)**
Geometrical and physical optics including such topics as thin lenses, spherical mirrors, lens aberrations, optical instruments, waves, interference, diffraction, absorption, transmission, and scattering. **PREREQUISITES:** Physics 2112 or Physics 2512, Mathematics 2322. *Three lecture, three laboratory hours per week.*
- 6212. Optics. (4). (G422)**
A continuation of Physics 6212. **PREREQUISITE:** Physics 6212. *Three lecture, three laboratory hours per week.*
- 6310. Radioisotope Technology. (3). (G431)**
Properties and detection of radiation, production of isotopes, use of detection devices, radiation chemistry, thickness and density gauging, activation analysis, moisture measurement, safety procedures analytical tracer techniques, industrial radiography, procurement of radioisotopes and radioisotope licenses, and design of radiochemical laboratories. **PREREQUISITE:** College course in physics, chemistry, and mathematics. *Two lecture, two laboratory hours per week.*
- 6450. Thermodynamics. (3). (G451)**
A mathematical treatment of thermodynamics, including such topics as work, energy, enthalpy, entropy, reversible and irreversible processes, equilibria, specific heats and phase transitions. **PREREQUISITES:** Physics 2112 or 2512 and Mathematics 2322. *Three lecture hours per week.*

7010. General Physics for High School Teachers. (3). (501-I)

The course will consist of three one-hour lectures and one two-hour laboratory per week. It is a course designed to cover the basic and fundamental concepts of mechanics, heat, sound, light, electricity and magnetism, atomic and nuclear physics. These topics will be covered by lecture, demonstrations, and actual laboratory experiments. Daily problem assignments, as well as weekly laboratory reports and outside readings, will be required for each participant.

Selected topics will be adequately covered and emphasized. Credit for this course does not apply toward a major or minor in chemistry or physics.

7020. Fundamental Concepts of Contemporary Physics for High School Teachers. (3). (502-I)

The course will consist of three one-hour lectures and one two-hour laboratory session per week. The course material will be based to a great extent upon the topics covered in the original Volume 4 of the Physical Science Study Committee and will include many of the newer topics emphasized in the modern high school texts actually in use today. Electronics, the newer phases and concepts of electricity and magnetism, x-rays, radioactivity, and the basic principles of atomic and nuclear physics will be covered. The principle objective of the course will be to strengthen the background of those teachers now in the fields of atomic and nuclear physics. Credit for this course does not apply toward a major or minor in chemistry or physics.

7030. Selected Topics in Modern Physics for High School Teachers. (3). (503-I)

Some of the more advanced topics of atomic and nuclear physics, together with the basic concepts of solid state physics, electronics, and space technology will be presented. Laboratory experience with some of the more advanced electronic and nuclear equipment will be provided. *Three lecture hours per week.* **PREREQUISITE:** Physics 7010.

Political Science

MR. BUELL, *Chairman*, MR. MAHOOD, MRS. SAWYER

6211. The Constitution: Governmental Structure and Relationships. (3).

An analysis of the relationships and controls of the three branches and the nature of the division of power between the nation and the states, with emphasis on the role of the Supreme Court as the arbiter in the constitutional system.

6212. The Constitution: Political and Civil Rights. (3).

An examination of the judicial interpretation of the political and civil rights with emphasis on the period since 1875.

6213. Development of U. S. Domestic Policy. (3). (G412)

A study of the formation and execution of selected domestic policies (fiscal, economic, agriculture and conservation, welfare, grants-in-aid). This course is designed to explore in detail the political and administrative environment of governmental decision making.

6214. The Executive Process. (3).

A detailed study of the role of the executive in American politics.

6215. The Judicial Process. (3).

An examination of the structure of the legal system and the role of the judiciary in government and politics. Emphasis is on the American legal system and the factors which enter into judicial decision-making including political, social, economic, and psychological factors.

6224. Municipal Problems. (3). (G413)

A study of selected problems in municipal administration (organization, personnel, fiscal, planning).

- 6301. British Government and Politics. (3). (G423)**
The nature and development of the British Constitutional system. Special emphasis will be placed on the Cabinet, Parliament, and the Commonwealth organization and function.
- 6305. Soviet Government and Politics. (3).**
Organization and function of the authoritarian state, with emphasis on the role of the Communist Party and ideology.
- 6306. Contemporary Latin American Politics. (3).**
A study of contemporary problems in Latin American politics and inter-American relations.
- 6401. Modern Political Ideologies. (3).**
A study of authoritarianism and democracy as represented by a comparison of democracy, socialism, communism, and fascism.
- 6405. American Political Thought. (3).**
An analysis of political thought in the United States from the colonial to the present time, with emphasis placed on the relation between political thought and political institutions and practices.
- 6501. Contemporary Problems in International Politics. (3).**
A study of contemporary problems in international relations with emphasis on the major powers.
- 6504. International Law. (3).**
An analysis of the nature, scope, duties, rights, and evolutionary trends of international law.
- 6506. Problems in American Foreign Policy. (3).**
A study of American foreign policy problems taken from specific areas or issues of policy.
- 6601. Policy and Administration. (3).**
A study of the role of the administrator in the formulation of public policy; an examination of the processes, problems, and effects of executive influence in legislation and adjudication.
- 6604. Problems of Public Administration. (3).**
An examination of the administrative processes, including an investigation of laws, the powers, procedures, and the limitations upon administrative offices and agencies.
- 7106. The Political System. (3).**
A systematic analysis of the elements of the political system, showing the interrelationship of political culture (values, beliefs, attitudes, consensus), the formal and informal patterns of power, the patterns of interest, and the pattern of policy.
- 7201. Seminar in U. S. Political Institutions and Thought. (3). (531)**
A study of the development of major political institutions and thought.
- 7212. Seminar in Constitutional Problems. (3).**
- 7213. Seminar in Judicial Decision-Making. (3).**
An analysis of recent research in judicial decision-making, including the application of statistical techniques.
- 7216. Seminar in Political Behavior. (3).**
Genesis of political parties and pressure groups as political institutions. Study of political dynamics including the role and function of parties and pressure groups in the legislative, executive, and electoral processes.

- 7301. Seminar in Comparative Political Institutions and Thought. (3). (521)**
A comparative study of the development of political institutions and thought in major world governments.
- 7302. Seminar in comparative politics. (3).**
Study of selected problems in comparative government and politics.
- 7401. Seminar in Political Theory. (3).**
Study of selected topics involving the development of political thought.
- 7501. Seminar in International Politics. (3).**
A study of selected problems in International Politics.
- 7605. Seminar in Politics and Administration. (3).**
An explanation of the problems stemming from the relationships of politics and administration, stressing relevant analytical approaches and research methods.

Psychology

MR. McCANN, *Chairman*, MR. ANDERSEN, MR. BOONE, MR. CONSALVI,
MR. DEWS, MR. LEEMING, MR. LUFFER, MR. MORGAN

- 6101. History of Psychology. (3). (G411)**
A general orientation course covering the historical antecedents and systems of psychology.
PREREQUISITE: 12 semester hours in psychology, including Psychology 3201.
- 6201. Physiological Psychology. (3). (G412)**
A study of the physiological functions involved in behavior and experience. Surveys the physiology of the sense organs, nervous system and response mechanisms.
PREREQUISITE: 12 semester hours in psychology, including Psychology 3201.
- 6301. Advanced Quantitative Methods. (3). (G413)**
Emphasis on standard errors of all commonly used statistics as well as the analysis of variance, Chi Square, and non-parametric tests.
PREREQUISITE: Psychology 2301.
- 6302. Psychological Appraisal. (3). (G417)**
Introduction to the development and application of psychological tests. Survey of instruments and techniques currently used in the psychological appraisal of the individual.
PREREQUISITE: 12 semester hours in psychology, including Psychology 3201.
- 6401. Psychology of Exceptional Children. (3). (G414)**
Home and school problems of handicapped, retarded, emotionally unstable, precocious, or gifted children.
PREREQUISITE: 12 semester hours in psychology, including Psychology 3103 or 3201.
- 7201. Theories of Learning. (3). (501)**
Examination and discussion of the major contemporary learning theories. Attention is given to the basic assumptions, logical structure, and experimental support for the theories of Hull, Skinner, Tolman, Guthrie and of the Gestalt and Probability theorists.
- 7202. Theories of Personality. (3). (502)**
A survey of the major contemporary theories of personality; consideration of the development and general nature of personality theory.

- 7203. Seminar: General. (3). (541)**
Systematic study of current topics in psychology of a general-theoretical nature.
PREREQUISITE: Consent of instructor.
- 7204. Seminar: General. (3). (542)**
(Same as above)
- 7205. Advanced Social Psychology. (3).**
A survey of the theoretical and research literature pertaining to current topics in social psychology; group dynamics, social influences and conformity, interpersonal perception, and attitude formation and change. A consideration of research techniques utilized in social psychology. *Two lectures and one laboratory each week.*
- 7206. Advanced Experimental Psychology I. (3).**
A study of experimental investigations of learning with emphasis on the nature of problems, experimental techniques and procedures, and theoretical significance.
- 7301. Psychometrics. (3). (503)**
Statistical procedures in the construction and evaluation of psychological tests and other measuring instruments. Advanced correlational techniques are stressed. The test as a research device and the quantitative analysis of research results are considered.
- 7302. Analysis of Variance. (3).**
A consideration of the underlying assumptions and applications of analysis of variance and covariance designs. **PREREQUISITE:** Psychology 2301 and 4301 or 6301 or the equivalent.
- 7401. Contemporary Approaches to Psychotherapy. (3). (511)**
A survey of psychotherapeutic methods and concepts utilized in the counseling of the emotionally disturbed individual. The client-centered method is emphasized.
- 7402. Measurements of Intelligence. (3). (521)**
Consideration of group and individual tests of intelligence with major emphasis on the student's acquiring proficiency in the administration, scoring, and interpretation of the Stanford-Binet, Wechsler Adult Intelligence Scale, and the Wechsler Intelligence Scale for Children.
- 7403. Projective Techniques. (3). (522)**
Consideration of the projective methods of personality assessment currently employed in clinical practice with emphasis on the development and application of the Rorschach technique.
- 7404. Directed Practicum. (1 to 3). (531)**
Seminar discussion and supervised experience in the application of basic psychological procedures and principles to clinical cases in various institutional settings.
PREREQUISITE: Consent of instructor.
- 7405. Directed Practicum. (1 to 3). (532)**
(Same as above)
- 7406. Directed Practicum. (1 to 3). (533)**
(Same as above)
- 7410. Seminar: Clinical. (3). (543)**
Systematic study of current topics in the field of clinical psychology. **PREREQUISITE:** Consent of instructor.
- 7411. Seminar: Clinical. (3). (544)**
Systematic study of current topics in the field of clinical psychology. **PREREQUISITE:** Consent of instructor.

7412. Psychopathology. (3).

Advanced consideration of behavior disorders, primarily those of functional origin. Emphasis on concepts of anxiety and stress in the etiology of neuroses and psychoses. **PREREQUISITE:** Psychology 3102.

7413. Mental Retardation. (3).

A comprehensive introduction to mental sub-normality as a biological and socio-cultural phenomenon. This course includes lectures, readings, and observation of various degrees and syndromes of mental retardation in adults and children. The current psychological, medical, genetic, and social issues are presented.

7991. Special Problems. (1-3).

Independent investigation of a problem selected in consultation with the instructor.

7992. Special Problems. (1-3).

(Same As Above)

7993. Special Problems. (1-3).

(Same As Above)

7995. Thesis. (3).

(593)

Application for writing a thesis must be filled out on an approved form after consultation with the major professor and filed with the Dean of the Graduate School.

7996. Thesis. (6).

(596)

(Same as above)

Sociology

MR. NEWTON, *Chairman*, MR. GORDON, MR. ROBERTS, MR. STEWART

6211. Modern Sociological Theories. (3).

(G422)

European contributions, American developments, recent trends and influences in sociological theory.

6222. History of Social Thought. (3).

(G419)

Emphasis on the historic sources of social ideas in Western culture in terms of their relevance to contemporary systematic theory.

6412. Urban Research. (3).

Extensive exploration of research methods that have proved useful in the study of urban social phenomena; the application, limitations, and advantages of various research approaches.

6413. Urban Theory Seminar. (3).

A seminar course in sociological theories of urbanism and urbanization. Analysis of both historical and contemporary theories.

6522. Analysis of Juvenile Delinquency. (3).

(G420)

Trends of juvenile delinquency; the development of case study techniques and diagnosis of juvenile delinquency; comparative analysis of various theoretical approaches.

6523. Techniques of Criminal Investigation. (3).

A description, analysis, and demonstration of historical and contemporary techniques and procedures utilized in the apprehension of the criminal.

- 6524. Penology. (3).**
The historical and contemporary analysis of penal systems and reformatories in terms of organization; procedures, programs, and effectiveness.
- 6525. Probation and Parole. (3).**
The analysis of various release procedures and their effectiveness from an historical, philosophical, and sociological point of view.
- 6610. Population. (3). (G417)**
Population theories and policies; their definition and history. Trends in population growth; methods of population analysis, and trends in fertility and mortality. Emphasis on fertility, mortality, sex and age composition, and migration and their influences on population change.
- 6830. Directed Individual Study. (1-4). (G499)**
Individually directed advanced reading and/or research in special areas of interest. **PREREQUISITE:** permission from departmental chairman.
- 6851. Medical Sociology. (3).**
The contributions of sociology to medicine; the sociology of illness, particularly mental illness; practitioners, patients and medical settings, particularly the modern hospital; the organization and the sociology of the distribution of medical care; the status and the methods of research in medical sociology.
- 7110. Proseminar. (3).**
Review and integration of major propositions, concepts, and methods from the various fields of sociology in their current state.
- 7210. Theory Seminar. (3).**
An advanced analysis of recent developments in sociological theory, including the relationship of theory to empirical research.
- 7230. Systems Theory Seminar. (3).**
The advanced analysis of specialized sociological systems as developed by American and European sociologists.
- 7320. Seminar in Methods of Social Research. (3).**
A seminar dealing with: (1) advanced statistical methods, including experimental design, the analysis of stochastic processes, and similar procedures; and (2) the general methodology of social research, including such topics as the location of research problems, the structure of arguments, the nature of evidence, and the more general logic of social research.
- 7420. Readings in Contemporary Family Life. (3).**
An advanced course in the study of the family which is primarily concerned with research findings in the areas of family disorganization, changes in family structure and function, parent-child interaction, working mothers, and problems of aging.
- 7460. Formal Organizations. (3).**
The relationship between organizational structure, ideology and interaction patterns.
- 7610. Techniques of Population Analysis. (3).**
An analysis of the sources of population data and the techniques for utilizing these data in population research and in other forms of social research in which population data are a meaningful part.
- 7810. Racial and Cultural Minorities. (3).**
A study of the empirical and conceptual aspects of minority status as determined by racial and cultural criteria.
- 7996. Thesis. (6).**
Supervised research in preparation for advanced degree thesis. **PREREQUISITE:** The formal filing of a research proposal and outline of procedures acceptable to the student's graduate committee.

Speech and Drama

MR. AUSPRICH, *Chairman*, MR. KENNEDY, MR. RAPP,
MR. RIGGS, MR. WHITE

- 6361. History and Criticism of British Public Address. (3).**
A study and analysis of British speakers and speaking from the 16th century to the present time. Emphasis will be placed on the speech situation, audience, issues and speakers. Such men as Fox, Pitt, Sheridan, Burke, Disraeli, and Churchill will be considered.
- 6362. History and Criticism of American Public Address. (3).**
An analysis of political, religious and social speaking from colonial times to the present. Such men as Clay, Emerson, Lincoln, Webster, and the Roosevelts will be considered.
- 6371. Speech Criticism. (3). (435)**
Problems in the theory and criticism of classical and modern rhetorical works; application of the principles of rhetoric to the critical evaluation of current public speaking practice.
- 6421. Interpretation of Poetry. (3).**
Studies in the style and structure of poetry of specific types and periods, as related to the response and performance of the oral interpreter. **PREREQUISITE:** Speech 2411.
- 6431. Interpretation of Prose. (3).**
Studies in the oral interpretation of prose fiction, with attention to various literary styles and structures. **PREREQUISITE:** Speech 2411.
- 6551. Studies in Theatre History. (3).**
Special problems in theatre history: the men and ideas which have shaped the theatre of the western world from antiquity to the present.
- 6571. Playwriting. (3). (457)**
A study of the theory and principles of writing plays for the stage. Practice in writing either the short or long play.
- 6581. Dramatic Theory and Criticism. (3).**
The major documents in dramatic theory and criticism from Aristotle to the present.
- 6601. Clinical Speech and Hearing Practicum. (3). (462)**
One hundred hours of supervised experience in evaluating and conducting therapy with children and adults who have communicative handicaps. This work is done in the Memphis Speech and Hearing Center and in other rehabilitation agencies, schools, and hospitals. **PREREQUISITE:** Permission of the instructor.
- 6602. Clinical Speech and Hearing Practicum. (3).**
A continuation of speech 4601.
- 6631. Audiometric Instrumentation. (3).**
A detailed study of the special problems of audiometric construction, instrumentation and methods of evaluating equipment. Special attention will be given to the purposes of audiometers, hearing aids, and testing rooms in audiometric instrumentation. **PREREQUISITE:** Speech 2631.
- 6632. Advanced Audiology. (3).**
A thorough study of clinical tests in audiology which include pre- and post-operative techniques, electrodermal audiometry, electro-encephalographic audiometry, and automatic audiometry. Special attention will also be given to neurologic implications in audiology and to the theory and testing in advanced audiological evaluation. **PREREQUISITE:** Speech 2631.

- 6671. Speech Pathology. (3). (461)**
Steps involved in the differential diagnosis of speech disorders, establishing etiology, and planning a corrective program. Observation of diagnostic sessions in the Memphis Speech and Hearing Center. The contributions of surgery, medicine, psychology, and other related disciplines. **PREREQUISITES:** Speech 2611, 2621, 2631.
- 6841. Television Production III. (3). (481)**
An intensive study of the more advanced techniques of television production and direction. Special emphasis on the dramatic and children's formats with regard to their unique production problems. **PREREQUISITE:** Speech 3842.
- 6871. Television Management and Programming. (3). (482)**
A study of the principles of broadcast management and programming with special attention to station operation, the role of the producer-director, and the productions of local programs. **PREREQUISITE:** Speech 2811.
- 6921. Play Production for Secondary Schools. (3). (492)**
A survey of the problems of the play director in high school. The course considers: choosing the play, casting, directing, technical aspects of production; then relates these items to the student, the school, and the community.
- 6922. Directing the Forensics Program. (3). (493)**
Designed for the teacher charged with the responsibility of developing and directing interscholastic or intercollegiate competitive speech programs; the study of the historical background for such programs, organizing techniques, recruiting, tournament direction, and other related concerns.
- 7100. Bibliography and Methods of Research. (3). (493)**
1. The examination of bibliographical aids for the study of rhetoric and public address, speech pathology, theater and oral interpretation, speech education, and radio and television, 2. a survey of the types of research in speech, and 3. the presentation and documentation of scholarly writing.
- 7361. The Greek Tradition in Rhetoric and Oratory. (3). (6363)**
A study of the varying influences on, and movements within, the progressive development of the Greek tradition in rhetorical theory, practice, criticism, and pedagogy from Homer to the Renaissance.
- 7362. The Roman Tradition in Rhetoric and Oratory. (3). (6364)**
Development of the Roman tradition in rhetorical thought and practice from Cicero through the English Renaissance.
- 7363. Modern Rhetorical Theory: 1700 to the Present. (3). (6364)**
The study of the development of rhetorical theory in England, France, and America with particular emphasis on contributors and movements in the 18th and 19th centuries.
- 7461. Studies in Oral Interpretation. (3). (6364)**
Special problems in oral interpretation: the men and ideas contributing to the development of the oral tradition in literature.
- 7551. Theatre Aesthetics. (3). (6364)**
A survey of aesthetic theories affecting the theatre from Classical Greece to the present. Special attention will be given to the study of the interrelationship of theatre and the other arts.
- 7552. Seminar in American Theatre. (3). (6364)**
A study of the plays, players and playwrights of the American Theatre from its beginnings to the present.
- 7611. Seminar in Stuttering. (3). (6364)**
A study of the theories, therapies, and diagnostic procedures for the person who has rhythmic disorders in speech.
- 7621. Psychology of Speech. (3). (6364)**
Development of the normal speech and causes for deviations in personality—expressed in abnormal speech behavior.

- 7631. Seminar in Pediatric Audiology. (3).**
Methods used in assessing hearing problems in very young children. A study of educational opportunities for the deaf child and responsibility for early referral to proper programs.
- 7632. Teaching Speech to the Deaf. (3).**
Methods of teaching speech to deaf children.
- 7633. Language for the Deaf. (3).**
Methods of teaching language to deaf children.
- 7634. Auditory Training and Lipreading for the Deaf. (3).**
The use of amplification with deaf children, training the residual hearing, and developing the use of visual cues to aid in aural communication.
- 7635. Special Problems in Audiology. (1-3).**
Problems designed for the advanced student in audiology for independent problems.
- 7636. Special Problems in Audiology. (1-3).**
Problems designed for the advanced student in audiology for independent problems.
- 7661. Management of the Cleft Palate Child. (3).**
A study in the approaches to aiding the child with cleft palate and cleft lip utilizing the team approach (working with the Surgeon, Orthodontist, Prosthodontist, and others in total management of the child with cleft palate).
- 7662. Language Development and Disorders. (3).**
A study of the management of language and speech disorders in the child with minimal brain damage.
- 7663. Seminar in Aphasia. (3).**
Diagnostic and therapy procedures for the aphasic adult.
- 7691. Seminar in Voice Disorders. (3).**
Differential diagnosis in voice pathology. Effective remedial methods used for functional voice disorders. Therapy for organic voice problems (vocal nodes, papaloma, etc.). Management of the laryngectomized.
- 7692. Special Problems in Speech Pathology. (1-3).**
Problems designed for the advanced student for independent study in Speech Pathology.
- 7693. Special Problems in Speech Pathology. (1-3).**
Problems designed for the advanced student for independent study in Speech Pathology.
- 7881. Studies in Radio and Television. (3).**
A critical and comparative analysis of broadcast media programming with particular emphasis on radio and television tapes, kines, and films of outstanding artistic merit. Supplementary examination will involve selected readings of critics and social observers of mass media.
- 7882. Current Trends in Broadcasting. (3).**
A study of the most critical issues facing the broadcasting industry today. The emphasis will be on the present and future effect of these issues on radio and television programming, management, and regulation.
- 7931. Seminar in Problems in Speech Education. (3).**
Special study of selected current problems. Individual studies will be pursued with group analysis and discussion at regular class meetings.
- 7993. Special Problems. (1-3).**
Individual investigation of special research projects not included in these.
- 7994. Special Problems. (3-6).**
(Same As Above)
- 7995. Thesis. (6).**

The Graduate School

DEGREES CONFERRED—JANUARY 30, 1965

MASTER OF ARTS

Abbott, Frank Hall
Bland, Margaret Beatrice
Boggs, Jan Parr
Bogue, Ernest Grady
Branham, Virginia L.
Broadway, Albert L.
Carter, Evelyn Jones
Carver, James Howard
Cheatham, Joyce Augustine
Eure, Spurgeon Bryant
Griffith, Helene Ninette
Harman, Francis Edward
Holmes, Margarette H.
Howard, Thelma E. G.
Ingold, James Edward
Johnston, Will Jr.
Jordan, John N.
Landers, Billy Wayne

Lishman, Robert Clarence
McEnaney, Francis Gregory
Marchbanks, Robert Leland
Marshall, Mary Frances
Mathis, Carolyn Bruce Barner
Meyers, Lawrence Charles
Miller, Charles Alfred
Murphree, Doyle Robert
Ozier, Laverne Fuller
Phillips, Billy L.
Pinter, Daphne Jane Williams
Roberts, James Maurice
Sartore, Anna Fisher
Smith, John Densmore
Smith, Margaret A. P.
Stewart, Ronald Coleman
Tackett, John Robert
Vehr, George Joseph

MASTER OF BUSINESS ADMINISTRATION

Hoskins, Edward Evans
Hoyt, Henry Korb
McAuley, Charles M.
Rosser, Leonard Dexter

Shoda, Tatsuo
Singleton, Jerry Dean
Walsh, James Harold

MASTER OF SCIENCE

Payne, James Franklin

DEGREES CONFERRED—MAY 29, 1965

MASTER OF ARTS

Abron, Bernice Wise
Ainsworth, Charles Patterson
Atkins, Melvin Eugene
Beane, DeAlean Aikens
Bellamy, Robert Dennis
Benton, Ernestine Brown
Burns, Kenneth Jerome
Burrow, Hilda Keller
Burton, Virginia Morris
Calvert, Patricia Stephenson
Catchings, James Obbie
Cload, Frank Thomas
Counce, Graper Warren
Crain, Robert Eugene
Cuffari, John Paul
Davis, Willene Springer

Dutcher, Jane Stephens
Echols, Carrie Abernethy
Finch, Jerry Wayne
Franklin, Sydney
Goodman, Robert Carey Jr.
Haynes, C. Paul
Hendrix, Bobby
Hester, Doris Martin
House, Hattie Hopkins
Kennedy, Elizabeth P.
Kennedy, L. D.
McRae, Shirley W.
Mann, Elfredda B.
Martin, Mary Ethel
Mays, David Bruce
Meredith, Ann Catherine

Osier, John Davis
Pentecost, Avis Allen
Poska, Valentine Jerome
Rogers, Alice B.
Ruffin, Marie Phillips
Sanders, Carol Jeanne
Schenker, Florence Peters
Sewell, Maxine
Shaw, Nancy Sue

Smith, Raymond Eugene
Stivers, Joan Jarvis
Tardy, Grace King
Thomas, Mary White
Vaughan, Judith Lee
Wheatley, Louis K.
White, Gloria Lucretia
Wilmoth, Eva Mae Curley

MASTER OF BUSINESS ADMINISTRATION

Cummings, Robert Ray
Epps, John Thomas
Ho, Yu Lun
Kahn, Jack E.
Lowrey, Iry E. Jr.

McKay, Fred William Jr.
McMahon, Ivan Snell
Pryor, Mildred Golden
Smith, Frank Phipps Jr.
Smith, Kenneth B.

MASTER OF SCIENCE

Madden, Marion Leroy

MASTER OF SCIENCE IN TEACHING

Bell, Helen Cherry

DEGREES CONFERRED—AUGUST 20, 1965

MASTER OF ARTS

Akers, George Washington
Alley, Robert Floyd
Allgood, Hildred Walker
Arnold, Harry Thomas
Arrington, James Greenville
Ayton, George Victor
Bailey, Marvin Eugene
Bailey, Sara Joy
Barber, Nancy Jo Purtle
Beal, Martha Hoop
Bennett, Charleen Annette
Billingsley, Helen Williams
Bingham, James Morris
Bivens, Edwin Davis
Blair, Mary Suzanne
Blanchard, Nesby, Jr.
Boucher, Mildred Edwana
Bowsher, Patricia Louise
Brack, Alfreda Greene
Breytspraak, Martha Elizabeth
Brinkle, Lydle F.
Burnie, Valerie Anitra
Campbell, William Lynn
Carroll, Judith Garner
Catchings, Ouida Vaulx

Click, Billie June
Coffey, Donald Eugene
Coleman, Terry Joseph
Collier, Edwin Austin
Craig, Jack Lane
Davidson, Dorothy Burt
Davis, Homer E. Jr.
Davis, Leon Patrick
Denton, Betty Barber
Ellis, Norma White
Evans, Jean Young
Freeman, Charlotte
Gallina, Martha Faye
Gentry, Charles Otis
Gholston, Santee Ernest
Glover, Billy Joe
Gray, Frank Henry
Griffith, Graham McLain
Gwinn, Virginia M. Johnson
Hall, Ralph Goodman, Jr.
Hall, Rosella Hill
Hallman, David Alvin
Haney, Billy Joe
Harris, Mary Jo Elliott
Hearn, Mary E. Harrell

Hester, Bette Mason
 Hill, Betty Edmiston
 Houston, Mary Sue
 Howard, Richard Carl
 Johnson, Ralph A.
 Jones, Donald
 Kinney, Jane Alexander
 Knott, Robert Henry
 Lanier, Emma Lou Welborn
 Latta, Bette Card
 Lawless, Patrick Boyd
 Lewis, Mary Ann
 Loshbough, Jean Ogden
 Lowe, Diane Louise VanZandt
 Majors, Mildred Hoover
 Matlock, Betty Jean
 Montgomery, Sharron Brown
 Moody, Louise Moore
 Morgan, Robert Edward Lee
 Morse, Patricia
 Newman, Charlene
 Newton, Helen Burns
 Norbe, Roy Anthony
 Nunn, Helen Orme
 Palmer, Jack H.
 Payton, James B.
 Phillips, Jerry Charles
 Pollard, Raymond Leroy Jr.
 Ragsdale, Lafayette M.
 Rebholz, Ingrid
 Redfearn, Carolyn F.
 Reese, Gerald David
 Rhem, Thomas Nolan
 Rice, Patricia Privett

Richmond, Ann Armour
 Roberson, Jo Ann
 Robinson, Joyce Becton
 Saunders, Clyde
 Schwartz, Carrie L.
 Siler, Bernice Coy Gee
 Simmons, Ira Wilburn
 Simmons, Virginia S.
 Sims, Kathleene Ann
 Smith, Elizabeth Sharp
 Smith, Vinnie Johnson
 Stephenson, Johnnie McManus
 Stokes, John Ray
 Taylor, Frances Marie Harris
 Taylor, Joe Allen
 Taylor, Judith Marie
 Thompson, Ella B. G.
 Thompson, Mary Nell Conner
 Toles, Cloteal M.
 Tribble, Alford Paul
 Trotter, Bertha B. F.
 Tuggle, Gloria P. H.
 Turetzky, Mariette Katz
 Turpin, Lois Douglas
 Vowell, Jesse Harding
 Walker, Rosemary Fuller
 Wheeler, Bennye Alexander
 Wilbanks, Mary Ann
 Williams, Donald David
 Wilson, E. Joyce Meredith
 Winn, Earl Harold Jr.
 Witherington, Aubrey M. Jr.
 Workman, Sara Anne

MASTER OF BUSINESS ADMINISTRATION

Fretz, David R.
 Kelso, Clyde Douglas Jr.
 McAdams, Danny Woodrow
 Maloney, John Henry

Phillips, William Seaton
 Raines, D. Samuel L.
 Sides, Amos Wesley

MASTER OF SCIENCE

Daniel, Douglas S.
 Franklin, Joseph E.
 Likitwanagarn, Suthep

Outlaw, Benjamin Travis
 Schuele, Maryestel Ford

MASTER OF SCIENCE IN TEACHING

Frazier, James Doyle
 Grant, Marsha Joan

Pentecost, Joe M.





The Graduate School Bulletin
Memphis State University
Memphis, Tennessee 38111

Application to Mail at
SECOND CLASS POSTAGE RATES
Is Pending at Memphis, Tennessee 38111